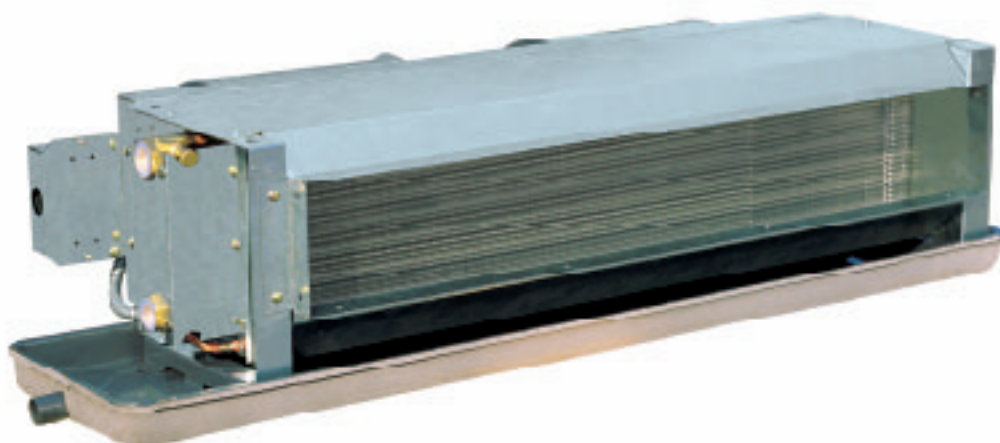


Ceiling Concealed Chilled Water Fan Coil Unit

Models: MCW 200 C/MCW 200 H
MCW 300 C/MCW 300 H
MCW 400 C/MCW 400 H
MCW 600 C/MCW 600 H
MCW 800 C/MCW 800 H
MCW 1000 C/MCW 1000 H
MCW 1200 C/MCW 1200 H



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Note: Installation and maintenance are to be performed only by qualified personnel who are familiar with local codes and regulations, and experienced with this type of equipment,

Caution: Sharp edges and coil surfaces are a potential injury hazard. Avoid contact with them.

Warning: Moving machinery and electrical power hazards. May cause severe personal injury or death. Disconnect and lock off power before servicing equipment.

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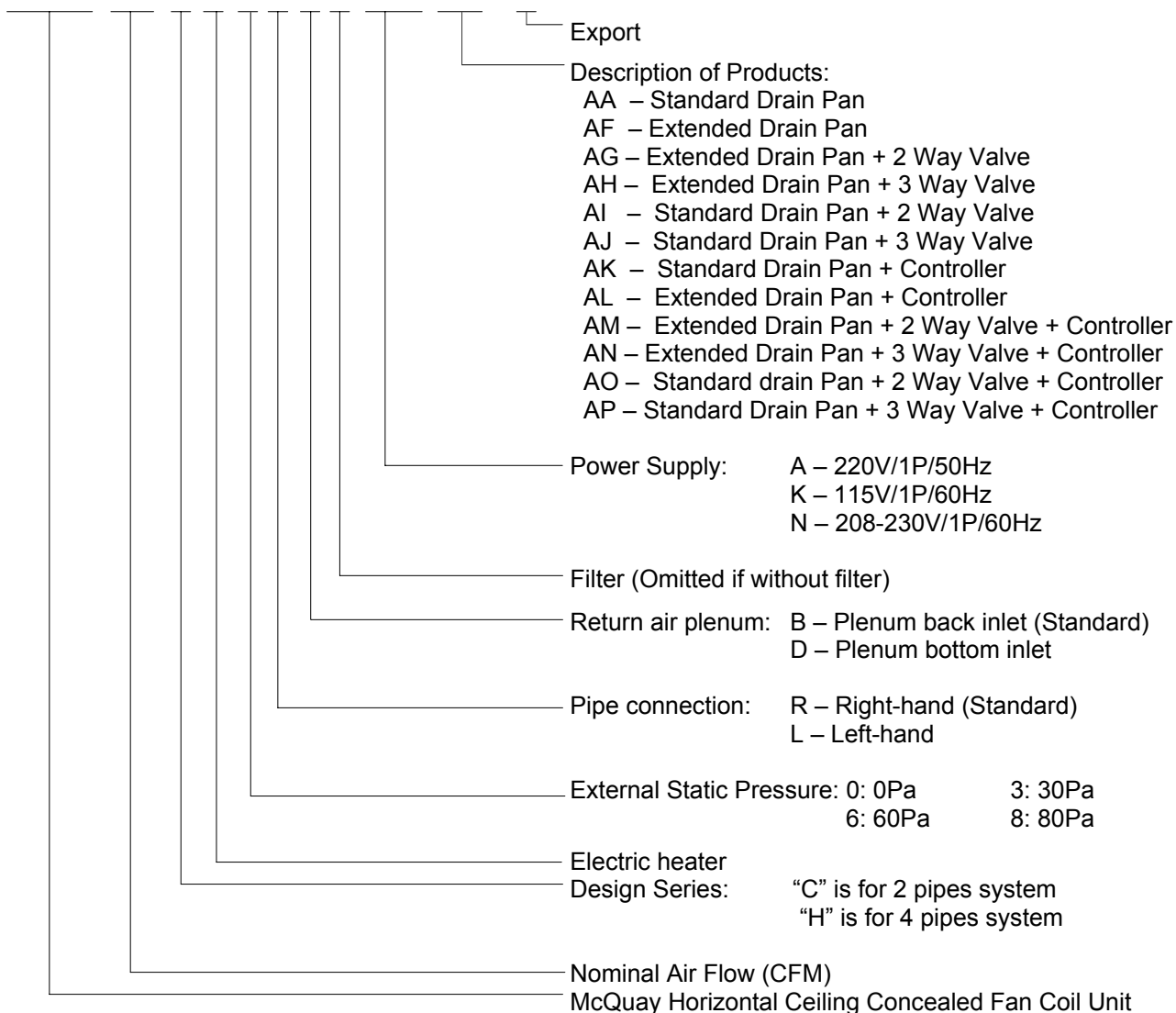
"Bulletin illustrations cover the general appearance of McQuay International products at the time of publication and we reserve the right to make changes in design and construction at any time without notice."

General Information

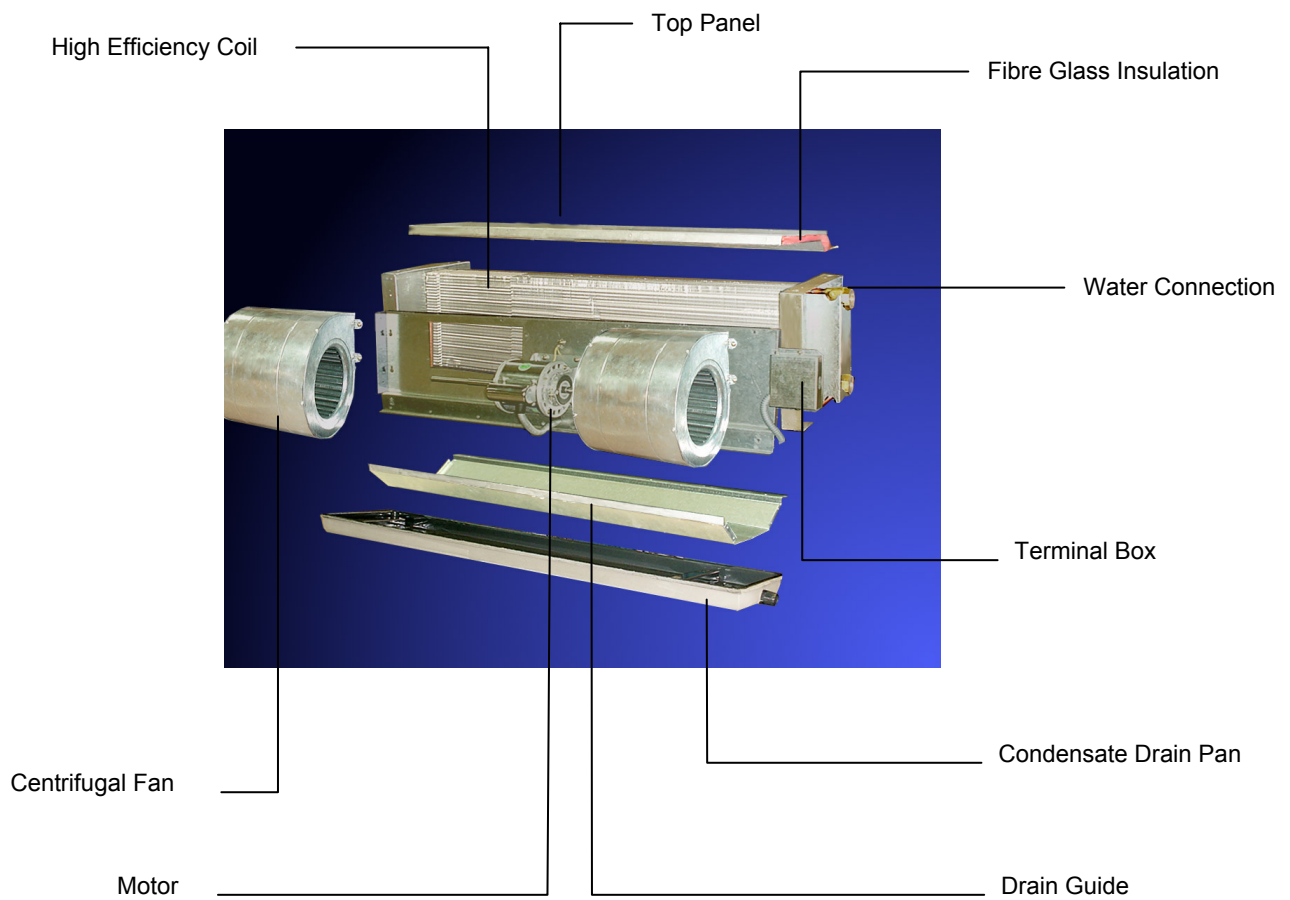
This manual has been prepared as guidance for installing and maintaining the McQuay fan coil unit. McQuay has produced a quality product that will effectively meet your application. However, proper installation and maintenance procedures must be followed to realize the full capability and life of the unit.

Nomenclature

MCW 200 C D 0 R B F A/N AA - E



Part Description



Features

Extra Low Noise Design

Enlarged fan wheels design allows lower fan RPM selection for the same external static pressure and airflow requirement. Thereby, noise level is significantly reduced.

Flexibility

Water connection side can be changed easily in the field by changing positions of the fan-motor assembly or the supply air flange assembly. Fan-motor assembly is not cased allowing back return or bottom return installations.

High Efficiency Heat Exchanger

A boundary layer film of air adhering to the fin surface will insulate the fin surface and severely reduces the heat exchange efficiency. MCQUAY slit fin design eliminates this boundary layer of air and creates continuous turbulence for best heat exchange efficiency.

Variable External Static Pressure

Four types of external static pressure are available for every unit : 0Pa, 30Pa, 60Pa, 80Pa.

Compact Design

This series of fan coil units are designed to suit most ceiling concealed installations. Unit height is only 251 mm across the entire model range. The feature also maximizes provisions for drain fall requirements.

Auxiliary Electric Heater

The heating source of McQuay fan coil unit MCW200CD~MCW1200CD is PTC (Positive Temperature Coefficient) heater.

1. Safety

A fuse (135°C, 10A) is connected in each PTC main wiring circuit. A thermostat (75°C, 10A) and another fuse (92°C, 10A) are connected in the control wiring circuit. If the fan of the unit is not running, the thermostat or fuse will cut off the power of the unit. In addition, the surface of the PTC heater is without electric power. So the fan coil unit is safe enough.

2. Save energy

Quick heating spread, strong heating capacity, steady performance and save energy are characters of PTC heater.

3. Easy to install and maintain

Need not remove the air duct when maintain the electric components of the units. Please refer to Figure 1 for installation and maintenance.

Caution

1. The temperature of the surface of PTC heater may be over 200°C if the power of unit is on but the fan of the unit is not running. Don't touch the unit at this time!
2. The starting current of the unit is more than its working current. It should be considered both the working current and starting current while choosing the fuse.
3. When the MCW200CD~MCW1200CD fan coil unit with PTC heater is running, ENSURE there is no obstructions to air flow into or out of the unit.

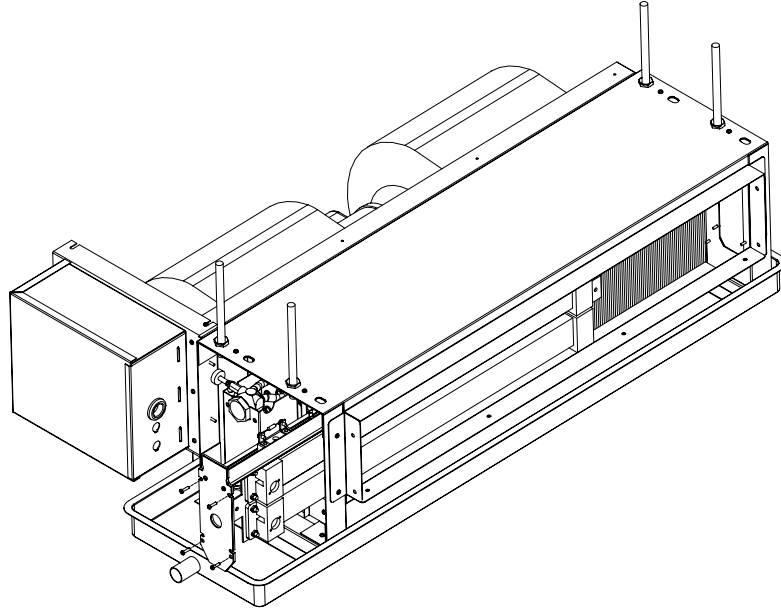


Figure 1

Electric Heating Power (kW)

Unit Size	Power Supply	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW
MCW200CD	220V-240V~/50Hz	0.5	1.0	1.5	2.0	-	-	-	-	-	-	-	-
	115V~/60Hz	0.5	1.0	1.5	2.0	-	-	-	-	-	-	-	-
MCW300CD	220V-240V~/50Hz	-	1.0	1.5	2.0	2.5	3.0	-	-	-	-	-	-
	115V~/60Hz	-	1.0	1.5	2.0	2.5	3.0	3.5	4.0	-	-	-	-
MCW400CD	220V-240V~/50Hz	-	-	-	2.0	2.5	3.0	3.5	-	-	-	-	-
	115V~/60Hz	-	-	-	2.0	2.5	3.0	3.5	4.0	-	-	-	-
MCW600CD	380V/3N~/50Hz	-	-	-	-	2.5	3.0	3.5	4.0	5.0	-	-	-
	115V~/60Hz	-	-	-	-	2.5	3.0	3.5	4.0	5.0	6.0	-	-
MCW800CD	380V/3N~/50Hz	-	-	-	-	-	3.0	3.5	4.0	5.0	-	-	-
	115V~/60Hz	-	-	-	-	-	3.0	3.5	4.0	5.0	6.0	-	-
MCW1000CD	380V/3N~/50Hz	-	-	-	-	-	3.0	3.5	4.0	5.0	-	-	-
	115V~/60Hz	-	-	-	-	-	3.0	3.5	4.0	5.0	6.0	-	-
MCW1200CD	380V/3N~/50Hz	-	-	-	-	-	3.0	3.5	4.0	5.0	6.0	7.0	8.0
	115V~/60Hz	-	-	-	-	-	3.0	3.5	4.0	5.0	6.0	7.0	8.0

Specifications

2 Pipes System Specification (220V ~ 240 V- 50 Hz)

Model			MCW200C	MCW300C	MCW400C	MCW600C	MCW800C	MCW1000C	MCW1200C
Air flow	High	m³/h	410	550	770	1060	1450	1640	2070
	Medium	m³/h	340	420	520	850	1180	1360	1760
	Low	m³/h	230	350	390	710	920	1100	1510
Cooling Capacity	Total	W	1500	2300	2850	4400	5410	6240	8010
		Btu/h	5110	7840	9720	15010	18450	21290	27330
	Sensible	W	3680	5200	7450	10060	13200	14900	19370
		Btu/h	12550	17740	25420	34320	45040	50840	66090
Heating Capacity		W	2240	3300	4450	6220	7900	9120	10810
Water Flow		l/min(m³/hr)	7(0.41)	10(0.57)	13(0.78)	19(1.08)	24(1.39)	26(1.56)	32(1.92)
Head Loss		kPa	14.6	12.0	21.6	38.2	18.4	21.0	32.7
Fan									
Type			Centrifugal fan (forward-curved galvanized steel fan wheels)						
Number of Fans			1	1	2	2	3	3	4
Fan Housing			Galvanized steel						
Coil									
Type			Seamless copper tube mechanically bonded to configured aluminium fin						
Routine Testing Pressure			Pressure test: 3.0MPa for 1 minute; leakage test: 1.6MPa for 5 minutes						
Motor									
Type			Split-capacitor motor with ball bearing						
Number of Motors			1	1	1	1	2	2	2
Rated Voltage			220-240V~						
Rated Frequency			50Hz						
Rated Input power	0 Pa	W	22	33	45	65	100	105	133
	30 Pa	W	27	58	74	120	165	177	237
	60 Pa	W	41	65	83	140	197	215	280
	80 Pa	W	44	79	85	148	200	220	283
Insulation			Class E						
Pipe Connection			Rc3/4						
Drain Pipe			R 3/4						
Dimension	Length	mm	714	884	1014	1214	1464	1564	1824
	Width	mm	490 (without Plenum) / 556 (with Plenum)						
	Height	mm	251						
Net Weight		kg	19	22	26	30	41	44	46
Net Weight (Plenum)		kg	20	23	28	33	44	48	50

Conditions:

Cooling Capacity: Entering air temp. 27°C (DB*), 19.5(WB**); Entering water temp. 7°C, Leaving water temp. 12°C

Heating Capacity: Entering air temp. 21°C(DB); Entering water temp. 60°C, the same amount of water flow with cooling.

Air Flow: Under dry coil conditions, fan speed high weight: Not include packing

* DB: Dry Bulb **WB: Wet Bulb

Note: The suggested range of the entering water temperature is 5°C-10°C while cooling. To make sure the unit run normally for long time, the entering water temperature should not be more than 60°C. Water pressure of the unit should not be more than 1.3MPa.

2 Pipes System Specification (115 V- 60 Hz)

Model			MCW200C	MCW300C	MCW400C	MCW600C	MCW800C	MCW1000C	MCW1200C
Air flow	High	m³/h	408	595	765	1138	1427	1699	2175
	Medium	m³/h	306	459	663	901	1155	1308	1750
	Low	m³/h	204	340	510	731	952	1054	1444
Cooling Capacity	Total	W	1500	2300	2850	4400	5410	6240	8010
		Btu/h	5110	7840	9720	15010	18450	21290	27330
	Sensible	W	3680	5200	7450	10060	13200	14900	19370
		Btu/h	12550	17740	25420	34320	45040	50840	66090
Heating Capacity		W	2240	3300	4450	6220	7900	9120	10810
Water Flow		l/min(m³/hr)	7(0.41)	10(0.57)	13(0.78)	19(1.08)	24(1.39)	26(1.56)	32(1.92)
Head Loss		kPa	14.6	12.0	21.6	38.2	18.4	21.0	32.7
Fan									
Type			Centrifugal fan (forward-curved galvanized steel fan wheels)						
Number of Fans			1	1	2	2	3	3	4
Fan Housing			Galvanized steel						
Coil									
Type			Seamless copper tube mechanically bonded to configured aluminium fin						
Routine Testing Pressure			Pressure test: 3.0MPa for 1 minute; leakage test: 1.6MPa for 5 minutes						
Motor									
Type			Split-capacitor motor with ball bearing						
Number of Motors			1	1	1	1	2	2	2
Rated Voltage			115V~						
Rated Frequency			60Hz						
Rated Input power	60 Pa	W	63	97	111	183	263	281	357
	80 Pa	W	67	104	117	187	265	285	357
Insulation			Class E						
Pipe Connection			Rc3/4						
Drain Pipe			R 3/4						
Dimension	Length	mm	714	884	1014	1214	1464	1564	1824
	Width	mm	490 (without Plenum) / 556 (with Plenum)						
	Height	mm	251						
Net Weight		kg	19	22	26	30	41	44	46
Net Weight (Plenum)		kg	20	23	28	33	44	48	50

Conditions:

Cooling Capacity: Entering air temp.26.7DB*),19.4(WB**); Entering water temp. 7°C, Leaving water temp. 12°C

Heating Capacity: Entering air temp. 21°C(DB); Entering water temp. 60°C, the same amount of water flow with cooling.

Air Flow: Under dry coil conditions, fan speed high weight: Not include packing

* DB: Dry Bulb **WB: Wet Bulb

Note: The suggested range of the entering water temperature is 5°C-10°C while cooling. To make sure the unit run normally for long time, the entering water temperature should not be more than 60°C. Water pressure of the unit should not be more than 1.3MPa

2 Pipes System Specification (208V ~ 230 V- 60 Hz)

Model			MCW200C	MCW300C	MCW400C	MCW600C	MCW800C	MCW1000C	MCW1200C
Air flow	High	m³/h	408	595	765	1138	1427	1699	2175
	Medium	m³/h	306	459	663	901	1155	1308	1750
	Low	m³/h	204	340	510	731	952	1054	1444
Cooling Capacity	Total	W	2240	3300	4450	6220	7900	9120	10810
		Btu/h	7640	11260	15180	21220	26950	31110	36880
	Sensible	W	1500	2300	2850	4400	5410	6240	8010
		Btu/h	5110	7840	9720	15010	18450	21290	27330
Heating Capacity		W	3680	5200	7450	10060	13200	14900	19370
Water Flow		l/min(m³/hr)	7(0.41)	10(0.57)	13(0.78)	19(1.08)	24(1.39)	26(1.56)	32(1.92)
Head Loss		kPa	14.6	12	21.6	38.2	18.4	21	32.7
Fan									
Type			Centrifugal fan (forward-curved galvanized steel fan wheels)						
Number of Fans			1	1	2	2	3	3	4
Fan Housing			Galvanized steel						
Coil									
Type			Seamless copper tube mechanically bonded to configured aluminium fin						
Routine Testing Pressure			Pressure test: 3.0MPa for 1 minute; leakage test: 1.6MPa for 5 minutes						
Motor									
Type			Split-capacitor motor with ball bearing						
Number of Motors			1	1	1	1	2	2	2
Rated Voltage			208~230V~						
Rated Frequency			60Hz						
Rated Input power	60Pa	W	77	97	122	174	246	274	336
	80Pa	W	81	102	130	183	256	281	356
Insulation			Class E						
Pipe Connection			Rc3/4						
Drain Pipe			R 3/4						
Dimension	Length	mm	714	884	1014	1214	1464	1564	1824
	Width	mm	490 (without Plenum) / 556 (with Plenum)						
	Height	mm	251						
Net Weight		kg	19	22	26	30	41	44	46
Net Weight (Plenum)		kg	20	23	28	33	44	48	50

Conditions:

Cooling Capacity: Entering air temp. 26.7(DB*), 19.4(WB**); Entering water temp. 7°C, Leaving water temp. 12°C

Heating Capacity: Entering air temp. 21°C(DB); Entering water temp. 60°C, the same amount of water flow with cooling.

Air Flow: Under dry coil conditions, fan speed high weight: Not include packing

* DB: Dry Bulb **WB: Wet Bulb

Note: The suggested range of the entering water temperature is 5°C-10°C while cooling. To make sure the unit run normally for long time, the entering water temperature should not be more than 60°C. Water pressure of the unit should not be more than 1.3MPa.

4 Pipes System Specification (220V ~ 240V – 50 Hz)

Model			MCW200H	MCW300H	MCW400H	MCW600H	MCW800H	MCW1000H	MCW1200H
Air flow	High	m³/h	408	595	765	1138	1427	1699	2175
	Medium	m³/h	340	510	680	1104	1240	1495	1869
	Low	m³/h	272	340	595	765	1037	1087	1529
Cooling Capacity	Total	W	2260	3360	4240	6520	8170	9190	11910
		Btu/h	7710	11460	14460	22240	27870	31350	40630
	Sensible	W	1500	2300	2850	4400	5410	6240	8010
		Btu/h	5110	7840	9720	15010	18450	21290	27330
Heating Capacity		W	3570	5040	7230	9760	12800	14450	18790
1-Row Heating Capacity		W	1410	2300	3350	4430	5200	7010	8570
Water Flow	3-Row	l/min	7(0.41)	10(0.57)	13(0.78)	19(1.08)	24(1.39)	26(1.56)	32(1.92)
	1-Row	(m³/hr)	4(0.24)	4(0.24)	4(0.24)	4(0.24)	4(0.24)	9(0.50)	9(0.50)
Head Loss	3-Row	kPa	16	13	22	47	33	26	45
	1-Row		8	8	15	17	21	18	20
Fan									
Type			Centrifugal fan (forward-curved galvanized steel fan wheels)						
Number of Fans			1	1	2	2	3	3	4
Fan Housing			Galvanized steel 0.5mm						
Coil									
Type			Seamless copper tube mechanically bonded to configured aluminium fin						
Routine Testing Pressure									
Motor									
Type			Split-capacitor motor with ball bearing						
Number of Motors			1	1	1	1	2	2	2
Rated Voltage			220-240V~						
Rated Frequency			50Hz						
Rated Input power	60Pa	W	55	77	95	155	207	221	285
	80Pa	W	59	84	101	159	213	225	287
Insulation			Class E						
Pipe Connection			Rc3/4						
Drain Pipe			R 3/4						
Dimension	Length	mm	714	884	1014	1214	1464	1564	1824
	Width	mm	490 (without Plenum) / 556 (with Plenum)						
	Height	mm	251						
Net Weight		kg	20	24	28	32	44	47	49
Net Weight (Plenum)		kg	22	27	31	36	48	52	56

Conditions:

Cooling Capacity: Entering air temp.27°C (DB*),19.5°C (WB**); Entering water temp. 7°C, Leaving water temp. 12°C

Heating Capacity: Entering air temp. 21°C (DB); Entering water temp. 60°C, the same amount of water flow with cooling.

Air Flow: Under dry coil conditions, fan speed high weight: Not include packing

* DB: Dry Bulb **WB: Wet Bulb

4 Pipes System Specification(115v – 60Hz)

Model			MCW200H	MCW300H	MCW400H	MCW600H	MCW800H	MCW1000H	MCW1200H
Air flow	High	m³/h	408	595	765	1138	1427	1699	2175
	Medium	m³/h	340	510	680	1104	1240	1495	1869
	Low	m³/h	272	340	595	765	1037	1087	1529
Cooling Capacity	Total	W	2260	3360	4240	6520	8170	9190	11910
		Btu/h	7710	11460	14460	22240	27870	31350	40630
	Sensible	W	1500	2300	2850	4400	5410	6240	8010
		Btu/h	5110	7840	9720	15010	18450	21290	27330
Heating Capacity		W	3570	5040	7230	9760	12800	14450	18790
1-Row Heating Capacity		W	1410	2300	3350	4430	5200	7010	8570
Water Flow	3-Row	l/min	7(0.41)	10(0.57)	13(0.78)	19(1.08)	24(1.39)	26(1.56)	32(1.92)
	1-Row	(m³/hr)	4(0.24)	4(0.24)	4(0.24)	4(0.24)	4(0.24)	9(0.50)	9(0.50)
Head Loss	3-Row	kPa	16	13	22	47	33	26	45
	1-Row		8	8	15	17	21	18	20
Fan									
Type			Centrifugal fan (forward-curved galvanized steel fan wheels)						
Number of Fans			1	1	2	2	3	3	4
Fan Housing			Galvanized steel 0.5mm						
Coil									
Type			Seamless copper tube mechanically bonded to configured aluminium fin						
Routine Testing Pressure			Pressure test: 3.0MPa for 1 minute; leakage test: 1.6MPa for 5 minutes						
Motor									
Type			Split-capacitor motor with ball bearing						
Number of Motors			1	1	1	1	2	2	2
Rated Voltage			115V~						
Rated Frequency			60Hz						
Rated Input power	60Pa	W	67	105	123	189	265	283	360
	80Pa	W	71	112	129	193	269	287	362
Insulation			Class E						
Pipe Connection			Rc3/4						
Drain Pipe			R 3/4						
Dimension	Length	mm	714	884	1014	1214	1464	1564	1824
	Width	mm	490 (without Plenum) / 556 (with Plenum)						
	Height	mm	251						
Net Weight		kg	20	24	28	32	44	47	49
Net Weight (Plenum)		kg	22	27	31	36	48	52	56

Conditions:

Cooling Capacity: Entering air temp.27°C (DB*),19.5°C (WB**); Entering water temp. 7°C, Leaving water temp. 12°C

Heating Capacity: Entering air temp. 21°C (DB); Entering water temp. 60°C, the same amount of water flow with cooling.

Air Flow: Under dry coil conditions, fan speed high weight: Not include return air plenum and packing

* DB: Dry Bulb **WB: Wet Bulb

COOLING CAPACITY

(Btu/h) 3 Rows Coil

Model	Entering Water Temp. °F (°C)	Water Flow l/min	W.P.D kPa	Entering Air Temperature °F (°C)																
				DB = 75.2(24)		DB = 77(25)		DB = 78.8(26)		DB = 80(26.7)		DB = 80.6(27)		DB = 82.4(28)						
				WB = 62.6(17)	TH	SH	TH	SH	WB = 64.4(18)	TH	SH	WB = 66.2(19)	TH	SH	WB = 67(19.4)	TH	SH	WB = 68(20)	TH	SH
MCW200C	41 (5)	4.0	6.56	6180	4765	6730	4905	5045	7340	4970	7635	5305	7910	5175	8490	5290				
		5.5	10.86	6870	5060	7530	5235	5410	8210	5320	8565	5680	8915	5580	9625	5735				
		7.0	15.91	7360	5270	8085	5470	5675	8810	5570	9210	5950	9595	5860	10370	6040				
		8.5	21.64	7730	5430	8480	5645	5850	9200	5740	9670	6145	10060	6055	10885	6250				
MCW200C	42.8 (6)	4.0	6.56	5730	4580	6290	4730	4860	6870	4780	7195	5125	7440	4990	8045	5120				
		5.5	10.86	6360	4835	7010	5020	5190	7710	5110	8035	5465	8365	5355	9075	5515				
		7.0	15.91	6815	5035	7520	5230	5435	8280	5350	8655	5720	9010	5620	9810	5810				
		8.5	21.64	7145	5180	7895	5390	5610	8650	5510	9095	5900	9475	5810	10300	6010				
MCW200C	44.6 (7)	4.0	6.56	5250	4385	5805	4535	4685	6470	4620	6725	4950	6985	4820	7565	4940				
		5.5	10.86	5860	4630	6480	4800	4975	7190	4910	7500	5250	7830	5145	8530	5305				
		7.0	15.91	6260	4795	6965	5000	5195	7685	5120	8070	5480	8450	5390	9220	5575				
		8.5	21.64	6560	4925	7315	5145	5355	8080	5270	8485	5650	8890	5570	9710	5765				
MCW200C	46.4 (8)	4.0	6.56	4765	4185	5340	4350	4495	6010	4450	6225	4755	6490	4635	7115	4775				
		5.5	10.86	5350	4425	5975	4595	4775	6630	4700	6985	5050	7280	4935	7980	5095				
		7.0	15.91	5695	4565	6395	4770	4965	7115	4890	7495	5250	7855	5155	8620	5340				
		8.5	21.64	5975	4675	6710	4895	5110	7500	5030	7880	5400	8270	5320	9085	5520				
MCW200C	48.2 (9)	4.0	6.56	4165	4105	4865	4160	4305	5510	4260	5720	4565	6005	4450	6600	4590				
		5.5	10.86	4825	4210	5460	4395	4565	6090	4500	6465	4850	6755	4735	7450	4900				
		7.0	15.91	5145	4340	5815	4535	4735	6530	4600	6915	5020	7265	4925	8025	5115				
		8.5	21.64	5380	4435	6110	4655	4870	6865	4800	7265	5155	7645	5075	8470	5285				
MCW200C	50 (10)	4.0	6.56	3890	3830	4290	4040	4130	5040	4080	5260	4395	5520	4280	6105	4415				
		5.5	10.86	4230	4030	4905	4180	4365	5565	4310	5925	4645	6230	4535	6890	4695				
		7.0	15.91	4585	4120	5255	4315	4515	5960	4450	6340	4800	6670	4705	7425	4890				
		8.5	21.64	4785	4200	5500	4415	4625	6330	4570	6645	4915	7025	4835	7825	5035				

Fan speed correction factor

W.P.D: Water Pressure Drop Dry Bulb ** WB: Wet Bulb
TH: Total Heat SH: Sensible Heat
Fan Speed: High 1 Btu = 0.2928104 W

MODEL	Medium		Low	
	Total	Sensible	Total	Sensible
MCW200C	0.85	0.83	0.71	0.67

COOLING CAPACITY

(Btu/h) 3 Rows Coil

Model	Entering Water Temp. °F (°C)	Water Flow l/min	W.P.D kPa	Entering Air Temperature °F (°C)															
				DB = 75.2(24)				DB = 77(25)				DB = 78.8(26)				DB = 80(26.7)			
				TH	SH	TH	SH	WB = 62.6(17)	TH	SH	WB = 64.4(18)	TH	SH	TH	SH	WB = 66.2(19)	TH	SH	WB = 67(19.4)
MCW300C	41 (5)	6	5.9	8945	6935	9730	7130	10570	7330	10970	7660	11035	7710	11435	7525	12270	7685	12740	8040
		8	9.3	9850	7315	10785	7570	11750	7810	12200	8150	12265	8205	12740	8040	13265	8265	13755	8265
		10	13.2	10535	7610	11550	7890	12620	8170	13100	8530	13180	8585	13695	8430	14840	8695	15575	8695
		12	17.6	11055	7840	12150	8150	13250	8440	13760	8810	13845	8865	14395	8725	15575	9000	15575	9000
MCW300C	42.8 (6)	6	5.9	8260	6650	9100	6875	9935	7080	10340	7410	10400	7460	10750	7260	11625	7440	11625	7440
		8	9.3	9140	7020	10035	7260	10995	7505	11440	7850	11505	7900	11975	7740	12985	7965	12985	7965
		10	13.2	9750	7270	10760	7555	11795	7830	12280	8180	12350	8240	12890	8105	13995	8360	13995	8360
		12	17.6	10215	7475	11305	7785	12400	8080	12910	8440	12985	8500	13560	8375	14730	8655	14730	8655
MCW300C	44.6 (7)	6	5.9	7590	6380	8400	6595	9260	6820	9630	7140	9685	7185	10105	7015	10970	7195	10970	7195
		8	9.3	8395	6705	9315	6960	10225	7195	10700	7550	10775	7610	11200	7435	12205	7665	12205	7665
		10	13.2	8950	6940	9950	7225	10980	7500	11460	7850	11535	7910	12045	7765	13145	8020	13145	8020
		12	17.6	9385	7120	10445	7425	11540	7720	12040	8090	12120	8145	12685	8020	13880	8310	13880	8310
MCW300C	46.4 (8)	6	5.9	6705	6230	7690	6325	8540	6540	8930	6870	8995	6925	9380	6740	10285	6950	10285	6950
		8	9.3	7675	6415	8585	6670	9490	6905	9930	7250	10000	7305	10455	7145	11410	7365	11410	7365
		10	13.2	8170	6615	9135	6895	10160	7170	10630	7520	10705	7580	11215	7440	12300	7700	12300	7700
		12	17.6	8545	6770	9590	7080	10675	7375	11180	7740	11255	7800	11800	7665	13975	7960	13975	7960
MCW300C	48.2 (9)	6	5.9	6055	5970	7025	6065	7845	6280	8230	6610	8295	6660	8680	6485	9535	6675	9535	6675
		8	9.3	6900	6110	7825	6375	8755	6620	9190	6970	9260	7025	9675	6855	10660	7085	10660	7085
		10	13.2	7380	6295	8340	6575	9325	6840	9820	7210	9895	7270	10370	7115	11450	7375	11450	7375
		12	17.6	7710	6430	8735	6730	9810	7030	10300	7400	10380	7455	10920	7325	12065	7610	12065	7610
MCW300C	50 (10)	6	5.9	5650	5570	6055	5980	7145	6020	7540	6350	7600	6405	7975	6225	8785	6410	8785	6410
		8	9.3	5980	5895	7030	6065	7955	6320	8390	6670	8455	6720	8925	6575	9895	6810	9895	6810
		10	13.2	6565	5975	7535	6260	8515	6535	8980	6890	9055	6945	9550	6800	10590	7055	10590	7055
		12	17.6	6865	6095	7880	6395	8925	6685	9420	7060	9495	7115	10025	6985	11165	7270	11165	7270

W.P.D: Water Pressure Drop Dry Bulb ** WB: Wet Bulb
TH: Total Heat SH: Sensible Heat
Fan Speed: High 1 Btu = 0.2928104 W

Fan speed correction factor

MODEL	Medium		Low	
	Total	Sensible	Total	Sensible
MCW300C	0.84	0.86	0.70	0.66

COOLING CAPACITY

(Btu/h) 3 Rows Coil

Model	Entering Water Temp. °F (°C)	Water Flow l/min	W.P.D kPa	Entering Air Temperature °F (°C)											
				DB = 75.2(24)		DB = 77(25)		DB = 78.8(26)		DB = 80(26.7)		DB = 80.6(27)		DB = 80.6(27)	
				WB = 62.6(17)		WB = 64.4(18)		WB = 66.2(19)		WB = 67(19.4)		WB = 67.1(19.5)		WB = 68(20)	
				TH	SH	TH	SH	TH	SH	TH	SH	TH	SH	TH	SH
MCW400C	41 (5)	7	7.3	11195	8670	12180	8910	13230	9165	13450	9340	13810	9630	14310	9400
		10	13.8	12615	9265	13820	9590	15055	9900	15310	10090	15725	10405	16335	10205
		13	22.0	13605	9690	14915	10055	16300	10425	16580	10620	17030	10950	17700	10770
		16	31.8	14270	9985	15660	10380	17100	10765	17390	10970	17865	11305	18585	11145
MCW400C	42.8 (6)	7	7.3	10345	8310	11395	8590	12435	8845	12650	9020	13015	9320	13450	9065
		10	13.8	11670	8860	12865	9190	14095	9505	14340	9700	14755	10010	15360	9815
		13	22.0	12565	9245	13875	9610	15245	9980	15520	10180	15970	10505	16675	10345
		16	31.8	13200	9515	14615	9925	16040	10310	16330	10520	16800	10855	17515	10695
MCW400C	44.6 (7)	7	7.3	9505	7975	10515	8245	11595	8515	11800	8690	12125	8980	12650	8765
		10	13.8	10745	8475	11895	8795	13120	9115	13370	9310	13770	9620	14375	9425
		13	22.0	11545	8810	12845	9180	14180	9545	14450	9740	14895	10070	15590	9905
		16	31.8	12120	9050	13510	9460	14935	9850	15220	10050	15685	10390	16430	10245
MCW400C	46.4 (8)	7	7.3	8655	7635	9630	7895	10695	8170	10910	8350	11265	8650	11740	8425
		10	13.8	9820	8100	10960	8415	12165	8745	12410	8930	12820	9245	13375	9035
		13	22.0	10510	8380	11795	8750	13125	9115	13390	9310	13830	9640	14495	9470
		16	31.8	11035	8600	12400	9000	13805	9395	14090	9600	14565	9930	15290	9785
MCW400C	48.2 (9)	7	7.3	7570	7460	8800	7575	9780	7830	10010	8020	10390	8320	10830	8090
		10	13.8	8855	7715	10015	8050	11175	8355	11440	8550	11865	8875	12410	8670
		13	22.0	9490	7965	10735	8330	12055	8695	12320	8890	12760	9220	13410	9050
		16	31.8	9935	8150	11290	8550	12690	8945	12970	9150	13435	9480	14135	9330
MCW400C	50 (10)	7	7.3	7070	6965	7575	7480	8950	7525	9160	7700	9515	8000	9980	7780
		10	13.8	7565	7455	9005	7660	10220	7995	10470	8190	10870	8500	11435	8310
		13	22.0	8450	7555	9615	7895	10965	8275	11240	8480	11695	8815	12315	8635
		16	31.8	8840	7710	10160	8105	11550	8505	11830	8710	12290	9040	12985	8890

W.P.D: Water Pressure Drop Dry Bulb ** WB: Wet Bulb

TH: Total Heat SH: Sensible Heat

Fan Speed: High 1 Btu = 0.2928104 W

Fan speed correction factor

MODEL	Medium		Low	
	Total	Sensible	Total	Sensible
MCW400C	0.88	0.86	0.76	0.72

COOLING CAPACITY

(Btu/h) 3 Rows Coil

Model	Entering Water Temp. °F (°C)	Water Flow l/min	W.P.D kPa	Entering Air Temperature °F (°C)															
				DB = 75.2(24)		DB = 77(25)		DB = 78.8(26)		DB = 80(26.7)		DB = 80.6(27)		DB = 80.6(27)		DB = 82.4(28)			
				TH	SH	TH	SH	TH	SH	TH	SH	TH	SH	TH	SH	TH	SH		
MCW600C	41 (5)	12	22.60	18175	13595	19815	14020	21525	14420	22340	15060	22470	15155	23325	14835	25175	15230		
		15	33.73	19470	14150	21340	14655	23255	15130	24150	15790	24290	15895	25225	15600	27255	16055		
		18	46.78	20500	14590	22480	15145	24525	15660	25420	16320	25560	16425	26625	16175	28800	16675		
		21	61.69	21245	14920	23360	15525	25435	16050	26430	16750	26580	16855	27640	16600	29925	17135		
MCW600C	42.8 (6)	12	22.60	16820	13030	18510	13485	20135	13860	21010	14520	21150	14625	21920	14280	23750	14680		
		15	33.73	18015	13530	19865	14040	21725	14500	22610	15160	22745	15265	23690	14980	25760	15455		
		18	46.78	18945	13920	20955	14495	22925	14995	23870	15680	24015	15785	25020	15515	27240	16045		
		21	61.69	19685	14240	21735	14825	23860	15380	24840	16080	24995	16190	26045	15935	28310	16475		
MCW600C	44.6 (7)	12	22.60	15505	12495	17135	12930	18815	13340	19630	13980	19760	14080	20580	13765	22315	14140		
		15	33.73	16595	12940	18380	13430	20230	13900	21100	14560	21240	14660	22175	14380	24175	14840		
		18	46.78	17400	13275	19360	13830	21325	14335	22260	15020	22400	15125	23445	14880	25585	15385		
		21	61.69	18065	13550	20140	14155	22195	14695	23170	15390	23320	15500	24370	15250	26670	15815		
MCW600C	46.4 (8)	12	22.60	14090	11920	15800	12405	17415	12795	18280	13460	18410	13560	19165	13220	20965	13635		
		15	33.73	15115	12330	16930	12850	18705	13295	19630	13980	19775	14085	20640	13780	22625	14255		
		18	46.78	15845	12630	17780	13185	19735	13705	20660	14380	20800	14485	21795	14235	23970	14765		
		21	61.69	16445	12875	18475	13470	20520	14015	21480	14710	21635	14820	22720	14595	24950	15140		
MCW600C	48.2 (9)	12	22.60	12405	11555	14350	11835	16010	12255	16810	12900	16940	13000	17800	12710	19525	13105		
		15	33.73	13660	11750	15425	12250	17235	12450	18110	13350	18250	13495	19150	13215	21055	13665		
		18	46.78	14310	12005	16180	12550	18120	13065	19040	13750	19185	13855	20170	13605	22280	14120		
		21	61.69	14810	12205	16820	12805	18850	13350	19810	14050	19960	14155	20995	13925	23255	14490		
MCW600C	50 (10)	12	22.60	11115	10955	12930	11290	14580	11720	15380	12360	15505	12465	16305	12165	18075	12585		
		15	33.73	11905	11255	13945	11680	15740	12160	16610	12830	16750	12930	17595	12635	19540	13110		
		18	46.78	12750	11390	14615	11940	16540	12460	17460	13140	17600	13250	18515	12975	20610	13500		
		21	61.69	13190	11560	15140	12140	17160	12695	18110	13390	18260	13500	19290	13270	21485	13825		

W.P.D: Water Pressure Drop Dry Bulb ** WB: Wet Bulb
TH: Total Heat SH: Sensible Heat
Fan Speed: High 1 Btu = 0.2928104 W

Fan speed correction factor

MODEL	Medium		Low	
	Total	Sensible	Total	Sensible
MCW600C	0.86	0.84	0.76	0.72

COOLING CAPACITY

(Btu/h) 3 Rows Coil

Model	Entering Water Temp. °F (°C)	Water Flow l/min	W.P.D kPa	Entering Air Temperature °F (°C)															
				DB = 75.2(24)				DB = 78.8(26)				DB = 80(26.7)				DB = 80.6(27)			
				TH	SH	TH	SH	TH	SH	TH	SH	TH	SH	TH	SH	TH	SH	TH	SH
MCW800C	41 (5)	19	15.49	22655	16935	24810	17510	27020	18055	28030	18530	28645	18815	29300	18585	31635	19090		
		24	23.45	24350	17655	26695	18300	29110	18915	30220	19420	30890	19725	31670	19545	34320	20150		
		29	32.82	25570	18185	28105	18900	30730	19595	31910	20130	32615	20445	33375	20245	36110	20880		
		34	43.54	26585	18630	29170	19355	31850	20070	33080	20620	33820	20945	34620	20770	37490	21450		
MCW800C	42.8 (6)	19	15.49	21010	16250	23070	16795	25270	17355	26280	17830	26885	18115	27530	17890	29855	18400		
		24	23.45	22520	16880	24850	17525	27250	18155	28350	18660	29010	18960	29725	18760	32275	19340		
		29	32.82	23665	17370	26135	18060	28740	18765	29920	19300	30630	19620	31440	19450	34155	20085		
		34	43.54	24535	17735	27210	18520	29865	19230	31090	19780	31825	20110	32620	19930	35465	20615		
MCW800C	44.6 (7)	19	15.49	19370	15575	21470	16150	23575	16680	24530	17140	25100	17415	25740	17190	28045	17715		
		24	23.45	20675	16110	22980	16760	25365	17390	26460	17900	27115	18200	27820	18000	30350	18595		
		29	32.82	21740	16550	24190	17255	26720	17935	27880	18470	28580	18785	29330	18600	32095	19265		
		34	43.54	22545	16890	25100	17630	27795	18380	29050	18940	29805	19280	30590	19105	33410	19790		
MCW800C	46.4 (8)	19	15.49	17665	14885	19740	15465	21885	16025	22880	16510	24380	16795	24020	16540	26300	17060		
		24	23.45	18910	15385	21090	15995	23450	16635	24540	17140	25195	17450	25890	17250	28400	17845		
		29	32.82	19780	15745	22210	16445	24725	17135	25880	17670	26570	17990	27315	17800	29995	18455		
		34	43.54	20525	16045	23060	16790	25690	17520	26890	18070	27615	18405	28405	18230	31330	18970		
MCW800C	48.2 (9)	19	15.49	15820	14155	18005	14785	20130	15350	21110	15830	21705	16125	22310	15895	24560	16420		
		24	23.45	17050	14640	19305	15290	21580	15905	22620	16400	23245	16700	23930	16505	26425	17105		
		29	32.82	17845	14960	20205	15650	22700	16340	23840	16870	24530	17195	25275	17015	27930	17665		
		34	43.54	18475	15210	20990	15960	23595	16690	24790	17240	25510	17575	26290	17405	29075	18100		
MCW800C	50 (10)	19	15.49	13855	13660	16110	14060	18285	14665	19310	15160	19925	15465	20520	15240	22745	15770		
		24	23.45	14800	14035	17405	14560	19710	14195	20780	15710	21420	16015	22030	15795	24420	16370		
		29	32.82	15905	14185	18235	14875	20645	15550	21780	16090	22465	16410	23195	16225	25835	16890		
		34	43.54	16440	14395	18890	15130	21475	15870	22660	16420	23375	16750	24145	16585	26910	17290		

W.P.D: Water Pressure Drop Dry Bulb ** WB: Wet Bulb

TH: Total Heat SH: Sensible Heat

Fan Speed: High 1 Btu = 0.2928104 W

Fan speed correction factor

MODEL	Medium		Low	
	Total	Sensible	Total	Sensible
MCW800C	0.87	0.85	0.75	0.71

COOLING CAPACITY

(Btu/h) 3 Rows Coil

Model	Entering Water Temp. °F (°C)	Water Flow l/min	W.P.D kPa	Entering Air Temperature °F (°C)															
				DB = 75.2(24)		DB = 77(25)		DB = 78.8(26)		DB = 80(26.7)		DB = 80.6(27)		DB = 80.6(27)		DB = 82.4(28)			
				WB = 62.6(17)		WB = 64.4(18)		WB = 66.2(19)		WB = 67(19.4)		WB = 67.1(19.5)		WB = 68(20)		WB = 69.8(21)			
				TH	SH	TH	SH	TH	SH	TH	SH	TH	SH	TH	SH	TH	SH		
MCW1000C	41 (5)	20	12.49	25560	19245	27880	19840	30360	20450	31510	21350	31690	21490	32905	21035	35525	21590		
		25	18.56	27390	20015	30020	20730	32725	21415	33970	22350	34175	22500	35600	22110	38470	22745		
		30	25.65	28800	20620	31655	21415	34530	22165	35860	23130	36070	23285	37580	22925	40645	23620		
		35	33.72	29925	21110	32910	21955	35915	22750	37300	23740	37525	23895	39025	23520	42245	24275		
MCW1000C	42.8 (6)	20	12.49	23715	18475	26030	19085	28480	19695	29630	20600	29810	20750	30905	20250	33505	20820		
		25	18.56	25325	19145	27940	19865	30630	20560	31860	21490	32060	21640	33395	21230	36245	21870		
		30	25.65	26650	19700	29420	20480	32285	21230	33590	22190	33805	22345	35300	21990	38340	22695		
		35	33.72	27665	20135	30615	20980	33605	21780	34970	22760	35195	22920	36765	22585	39955	23340		
MCW1000C	44.6 (7)	20	12.49	21815	17700	24165	18335	26510	18925	27720	19860	27820	20010	29005	19520	31465	20050		
		25	18.56	23320	18315	25830	19000	28495	19705	29730	20640	29925	20790	31250	20380	34075	21030		
		30	25.65	24470	18785	27220	19565	30060	20330	31360	21290	31570	21445	32990	21065	36085	21810		
		35	33.72	25410	19180	28285	20010	31260	20810	32620	21800	32840	21955	34390	21625	37640	22420		
MCW1000C	46.4 (8)	20	12.49	19815	16895	22225	17570	24620	18190	25770	19100	25950	19250	27085	18790	29540	19335		
		25	18.56	21290	17485	23785	18185	26345	18860	27640	19820	27850	19980	29070	19540	31875	20200		
		30	25.65	22260	17875	24990	18665	27805	19430	29100	20390	29305	20550	30710	20170	33710	20895		
		35	33.72	23130	18235	25985	19065	28935	19880	30280	20860	30500	21015	31975	20670	35195	21465		
MCW1000C	48.2 (9)	20	12.49	17400	16345	20175	16775	22560	17410	23690	19320	23870	18465	25090	18045	27600	18630		
		25	18.56	19205	16650	21725	17375	24265	18055	25540	19020	25750	19175	26960	18745	29650	19370		
		30	25.65	20105	17010	22795	17795	25520	18535	26800	19500	27010	19655	28405	19285	31380	20010		
		35	33.72	20815	17295	23645	18130	26570	18945	27910	19930	28125	20085	29590	19740	32715	20515		
MCW1000C	50 (10)	20	12.49	15730	15500	18100	15985	20545	16655	21600	17540	21770	17685	22975	17270	25475	17865		
		25	18.56	16770	15945	19595	16555	22170	17260	23390	18210	23585	18360	24830	17945	27505	18590		
		30	25.65	17925	16150	20585	16930	23290	17680	24570	18640	24775	18800	26065	18405	29015	19140		
		35	33.72	18580	16405	21335	17220	24175	18020	25500	19000	25715	19160	27170	18820	30270	19600		

W.P.D: Water Pressure Drop Dry Bulb ** WB: Wet Bulb
TH: Total Heat SH: Sensible Heat
Fan Speed: High 1 Btu = 0.2928104 W

Fan speed correction factor

MODEL	Medium		Low	
	Total	Sensible	Total	Sensible
MCW1000C	0.86	0.85	0.76	0.73

COOLING CAPACITY

(Btu/h) 3 Rows Coil

Model	Entering Water Temp. °F (°C)	Water Flow l/min	W.P.D kPa	Entering Air Temperature °F (°C)											
				DB = 75.2(24)		DB = 78.8(26)		DB = 80(26.7)		DB = 80.6(27)		DB = 80.6(27)		DB = 82.4(28)	
				TH	SH	TH	SH	TH	SH	TH	SH	TH	SH	TH	SH
MCW1200C	41 (5)	26	22.44	33475	24840	36670	25685	39945	26505	41470	27670	41705	27850	43320	27285
		32	32.93	35655	25765	39095	26700	42725	27645	44370	28850	44630	29040	46370	28520
		38	45.23	37350	26490	40965	27495	44805	28515	46540	29760	46815	29955	48660	29460
		44	59.30	38580	27035	42425	28125	46315	29155	48120	30420	48400	30620	50350	30165
MCW1200C	42.8 (6)	26	22.44	31065	23820	34110	24635	37365	25460	38870	26620	39110	26805	40710	26255
		32	32.93	32985	24630	36400	25570	39915	26490	41540	27700	41795	27885	43545	27375
		38	45.23	34500	25270	38105	26285	41890	27300	43610	28540	43880	28735	44360	27700
		44	59.30	35745	25800	39480	26865	43435	27940	45230	29210	45505	29405	46025	28375
MCW1200C	44.6 (7)	26	22.44	28615	22815	31660	23640	34870	24475	36380	25640	36620	25825	38070	25230
		32	32.93	30280	23500	33670	24455	37155	25380	38770	26580	39025	26770	40760	26275
		38	45.23	31690	24085	35265	25110	38955	26100	40650	27340	40915	27530	42845	27095
		44	59.30	32785	24545	36505	25620	40410	26690	42180	17960	42460	28155	44480	27755
MCW1200C	46.4 (8)	26	22.44	26090	21795	29175	22655	32265	23455	33770	24630	34005	24815	35845	24265
		32	32.93	27645	22420	30895	23340	34360	24270	35960	25480	36210	25670	37930	25175
		38	45.23	28840	22910	32385	23935	36045	24935	37730	26170	37995	26365	39825	25905
		44	59.30	29850	23320	33535	24400	37350	25455	39110	26720	39380	26915	41370	26510
MCW1200C	48.2 (9)	26	22.44	23445	20745	26515	21620	29745	22495	31250	23670	31485	23855	32985	23305
		32	32.93	24980	21350	28215	22280	31635	23215	33230	24430	33485	24615	35070	24085
		38	45.23	26035	21775	29465	22770	33095	23780	34770	25020	35035	25210	36845	24760
		44	59.30	26870	22110	30530	23190	34310	24250	36050	25520	36325	25715	38225	25290
MCW1200C	50 (10)	26	22.44	20325	20030	23890	20615	27015	21470	28500	22650	28730	22830	30335	22325
		32	32.93	21685	20470	25500	21230	28875	22165	30470	23380	30725	23570	32295	23045
		38	45.23	23200	20850	26600	21650	30190	22660	31860	23900	32120	24095	33825	23615
		44	59.30	23925	20935	27470	21990	31225	23060	32950	24320	33225	24515	35105	24095

Fan speed correction factor

W.P.D: Water Pressure Drop Dry Bulb ** WB: Wet Bulb

TH: Total Heat SH: Sensible Heat

Fan Speed: High 1 Btu = 0.2928104 W

MODEL	Medium		Low	
	Total	Sensible	Total	Sensible
MCW1200C	0.89	0.87	0.75	0.70

HEATING CAPACITY

2 Pipes System Fan Speed : High (3 Rows Coil) Unit: Btu/h (1Btu = 0.2928104W)

Unit Size	Water Flow l/min	W.P.D kPa	Entering Air Temperature 69.8°F (21°C)(DB)								
			Entering Water Temperature°F °C								
			104(40)	113(45)	122(50)	131(55)	140(60)	149(65)	158(70)	167(75)	176(80)
MCW200C	4	6.6	6020	7530	9030	10535	12040	13545	15050	16555	18060
	5.5	10.9	6455	8070	9680	11295	12905	14520	16130	17750	19360
	7	15.9	6720	8405	10085	11760	13440	15125	16805	18485	20165
	8.5	21.6	6905	8635	10355	12085	13810	15540	17265	18990	20720
MCW300C	6	5.9	8775	10970	13165	15360	17550	19745	21945	24140	26335
	8	9.3	9370	11710	14050	16390	18735	21075	23420	25760	28100
	10	13.2	9750	12195	14630	17065	19510	21945	24380	26825	29260
	12	17.6	10025	12535	15035	17545	20055	22555	25065	27570	30075
MCW400C	7	7.3	11335	14165	17005	19835	22670	25505	28335	31170	34005
	10	13.8	12300	15370	18445	21520	24590	27665	30740	33815	36890
	13	22.0	12870	16085	19300	22520	25740	28955	32165	35385	38605
	16	31.8	13245	16560	19870	23180	26490	29805	33115	36425	39735
MCW600C	12	22.6	17895	22370	26845	31315	35790	40265	44740	49210	53685
	15	33.7	18730	23410	28095	32780	37465	42145	46830	51510	56190
	18	46.8	19320	24155	28980	33815	38640	43475	48300	53135	57960
	21	61.7	19760	24700	29635	34575	39520	44460	49400	54340	59280
MCW800C	19	15.5	22475	28095	33710	39330	44950	50565	56185	61805	67425
	24	23.5	23525	29400	35280	41160	47040	52925	58805	64685	70565
	29	32.8	24255	30320	36380	42450	48510	54575	60635	66705	72765
	34	43.5	24795	31000	37200	43395	49600	55800	61995	68200	74395
MCW1000C	20	12.5	24965	31205	37445	43690	49930	56170	62410	68655	74895
	25	18.6	26145	32675	39215	45750	52285	58820	65360	71895	78430
	30	25.7	26985	33730	40475	47225	53970	60720	67460	74210	80955
	35	33.7	27615	34525	41430	48330	55235	62140	69045	75950	82850
MCW1200C	26	22.5	32445	40560	48665	56780	64890	73000	81110	89225	97335
	32	32.9	33865	42330	50795	59260	67730	76195	84660	93125	101595
	38	45.2	34905	43630	52355	61080	69810	78530	87255	95985	104705
	44	59.3	35695	44620	53545	62470	71390	80315	89240	98165	107090

Note:

- The heating capacity of the medium speed and low speed can be calculated by the Speed Correction Factor.
- The heating capacity under different entering air temperature, calculating as following example of MCW600C:

Step 1: Heating capacity of MCW600C is 38640Btu/h under below condition:

Water Flow 18 l/min, Water Temperature 140°F (60°C), Air Temperature 69.8°F (21°C)

Step 2: Variance of heating capacity when entering air temperature varies 1°F:

$$38649 / (140 - 69.8) = 550.4\text{Btu/}^{\circ}\text{F}$$

Step 3: The heating capacity after modification under entering air temperature:

$$64.4^{\circ}\text{F} (18^{\circ}\text{C}) 550.4 \times (140 - 64.4) = 41610.2\text{Btu/h}$$

MODEL	MEDIUM	LOW
MCW200C	0.86	0.72
MCW300C	0.83	0.71
MCW400C	0.88	0.72
MCW600C	0.84	0.73
MCW800C	0.85	0.76
MCW1000C	0.83	0.73
MCW1200C	0.85	0.74

HEATING CAPACITY

4 Pipes System Fan Speed : High (1 Row Coil) Unit: Btu/h (1Btu = 0.2928104W)

Unit Size	Water Flow l/min	W.P.D kPa	Entering Air Temperature 69.8°F (21°C)(DB)									
			Entering Water Temperature°F °C									
			104(40)	113(45)	122(50)	131(55)	140(60)	149(65)	158(70)	167(75)	176(80)	185(85)
MCW200H	2	2	2350	2970	3790	4570	5220	6470	7540	10030	10920	11360
	3	5	2900	3720	4270	5150	6380	7470	9890	10880	11980	12940
	4	8	3410	4200	5080	6450	7340	9790	10650	11910	13510	13120
	6	18	4400	4980	6350	6860	9520	10440	11810	13440	14540	15500
MCW300H	2	2	3360	4200	5030	5870	6720	7560	8930	9230	10070	13460
	3	5	4250	5290	6360	7420	8480	9550	10610	11670	12730	16970
	4	8	4850	6070	7280	8500	9710	10920	12130	13340	14550	19880
	6	18	5680	7100	8510	9950	11360	12780	14190	15630	17040	21640
MCW400H	2	4	5310	6520	7970	9300	10630	11960	13270	14540	15930	17260
	3	9	6520	8140	13000	11400	13000	14650	16290	17910	19520	21350
	4	15	7320	9160	10990	12690	14650	16410	18310	20150	21970	25930
	6	32	8630	10800	12950	15120	17260	19430	21600	23750	25660	28120
MCW600H	2	5	6380	8050	9660	11260	12780	14570	16190	17790	19410	25760
	3	10	7710	9690	11740	13630	15420	17200	19520	21310	23340	31520
	4	17	8680	10990	13200	15460	17470	19820	22160	24380	26580	33590
	6	36	10270	13000	15700	18460	21120	23850	26550	28980	31850	41690
MCW800H	2	6	7150	8920	10710	12500	14280	16070	17860	19640	21430	28960
	3	12	8600	10750	12900	15050	17200	19350	21480	23630	25780	30450
	4	21	9710	12130	14550	16990	19410	21840	24260	26700	29120	39870
	6	45	11530	14420	17280	20160	23050	25930	28810	31700	34580	40120
MCW1000H	4	4	8090	10180	12830	14840	17040	18700	23710	25150	29040	30240
	6	9	11050	12900	16550	17200	22140	24840	27710	29750	36290	41560
	9	18	14090	15970	20230	21090	27130	29510	36060	37600	41220	52430
	12	31	15870	19140	20660	24770	33230	36610	39680	44150	48420	58600
MCW1200H	4	4	10170	12080	14360	17830	20370	21970	26100	28200	31560	43210
	6	9	12440	14570	19280	21670	24400	27230	32120	35060	37800	51200
	9	20	15290	18490	23070	26940	30160	33420	38730	42290	46110	57890
	12	35	17150	21030	27240	31250	37020	39820	43980	78380	52780	69880

Note:

- The heating capacity of the medium speed and low speed can be calculated by the Speed Correction Factor.
- The heating capacity under different entering air temperature, calculating as following example of MCW600C:

Step 1: Heating capacity of MCW600C is 38640Btu/h under below condition:

Water Flow 18 l/min, Water Temperature 140°F (60°C), Air Temperature 69.8°F (21°C)

Step 2: Variance of heating capacity when entering air temperature varies 1°F:

$$38649 / (140 - 69.8) = 550.4 \text{ Btu/°F}$$

Step 3: The heating capacity after modification under entering air temperature:

$$64.4^\circ\text{F} (18^\circ\text{C}) 550.4 \times (140 - 64.4) = 41610.2 \text{ Btu/h}$$

MODEL	MEDIUM	LOW
MCW200H	0.86	0.72
MCW300H	0.83	0.71
MCW400H	0.88	0.72
MCW600H	0.84	0.73
MCW800H	0.85	0.76
MCW1000H	0.83	0.73
MCW1200H	0.85	0.74

Sound Pressure Level(Measured in anechoic room)

Ceiling Concealed Chilled Water Fan Coil Unit

240V/50Hz/1PH - ESP 30Pa

Model	Speed	1/1 Octave Sound pressure level (dBA, ref 20μPa)							Overall A(dBA)
		125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	
MCW200C	High	18.5	20.7	20.8	21.1	16.3	7.0	4.8	32.6
	Medium	12.1	15.2	17.7	15.6	10.6	5.8	4.6	28.0
	Low	9.9	12.2	16.2	14.9	9.8	6.1	5.0	26.8

Microphone position: 1m in front of the unit and 1m below the vertical centre line of the unit.

The sound level is tested under 11.5dB(A) background noise in a baffle chamber with external static pressure of 30 Pa.

240V/50Hz/1PH – ESP 60Pa

Model	Speed	1/1 Octave Sound pressure level (dBA, ref 20μPa)							Overall A(dBA)
		125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	
MCW200C	High	20.9	23.3	31.9	29.7	4.1	14.8	6.9	40.1
	Medium	17.6	21.	29.2	25.6	21.6	13.4	5.7	37.2
	Low	16.3	19.8	27.3	22.4	19.3	11.2	4.4	34.9

Microphone position: 1m in front of the unit and 1m below the vertical centre line of the unit.

The sound level is tested under 11.5dB(A) background noise in a baffle chamber with external static pressure of 60 Pa.

240V/50Hz/1PH – ESP 80Pa

Model	Speed	1/1 Octave Sound pressure level (dBA, ref 20μPa)							Overall A(dBA)
		125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	
MCW200C	High	21.2	24.7	32.3	30.5	27.1	22.0	11.4	41.3
	Medium	23.0	24.6	31.9	30.0	27.1	22.7	11.5	40.8
	Low	19.4	22.4	29.7	27.4	24.5	19.9	8.8	38.8

Microphone position: 1m in front of the unit and 1m below the vertical centre line of the unit.

The sound level is tested under 11.5dB(A) background noise in a baffle chamber with external static pressure of 80 Pa.

240V/50Hz/1PH – ESP 30Pa

Model	Speed	1/1 Octave Sound pressure level (dBA, ref 20μPa)							Overall A(dBA)
		125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	
MCW300C	High	22.6	28.8	38.2	37.5	37.0	24.2	19.3	45.5
	Medium	19.3	22.2	32.8	34.6	26.3	22.6	17.4	41.6
	Low	18.2	18.9	27.8	28.4	24.3	18.4	16.2	36.0

Microphone position: 1m in front of the unit and 1m below the vertical centre line of the unit.

The sound level is tested under 11.5dB(A) background noise in a baffle chamber with external static pressure of 30 Pa.

240V/50Hz/1PH – ESP 60Pa

Model	Speed	1/1 Octave Sound pressure level (dBA, ref 20μPa)							Overall A(dBA)
		125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	
MCW300C	High	28.9	31.2	37.6	42.6	38.7	24.6	22.9	48.3
	Medium	22.3	26.5	35.5	38.9	36.6	20.1	18.8	44.7
	Low	18.2	21.3	22.2	29.4	19.5	15.1	16.2	37.8

Microphone position: 1m in front of the unit and 1m below the vertical centre line of the unit.

The sound level is tested under 11.5dB(A) background noise in a baffle chamber with external static pressure of 60 Pa.

240V/50Hz/1PH – ESP 30Pa

Model	Speed	1/1 Octave Sound pressure level (dBA, ref 20μPa)							Overall A(dBA)
		125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	
MCW400C	High	26.3	26.7	33.2	40.5	38.0	21.4	14.2	47.5
	Medium	25.5	25.0	31.5	37.0	36.5	18.0	13.5	43.7
	Low	23.3	24.5	30.0	36.0	35.0	16.0	12.0	42.6

Microphone position: 1m in front of the unit and 1m below the vertical centre line of the unit.

The sound level is tested under 11.5dB(A) background noise in a baffle chamber with external static pressure of 30 Pa.

240V/50Hz/1PH – ESP 60Pa

Model	Speed	1/1 Octave Sound pressure level (dBA, ref 20μPa)							Overall A(dBA)
		125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	
MCW400C	High	24.5	27.9	37.3	42.1	40.0	22.7	17.7	48.7
	Medium	22.8	26.7	35.1	40.2	38.6	20.2	16.5	46.3
	Low	21.5	26.2	34.6	40.0	38.2	20.0	16.2	46.4

Microphone position: 1m in front of the unit and 1m below the vertical centre line of the unit.

The sound level is tested under 11.5dB(A) background noise in a baffle chamber with external static pressure of 60 Pa.

240V/50Hz/1PH - ESP 80Pa

Model	Speed	1/1 Octave Sound pressure level (dBA, ref 20µPa)							Overall A(dBA)
		125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	
MCW400C	High	26.8	30.1	37.1	43.2	41.6	24.1	18.1	51.6
	Medium	23.1	28.5	35.9	42.0	40.8	23.6	17.8	49.6
	Low	22.7	27.4	35.1	41.8	40.3	22.3	17.4	48.5

Microphone position: 1m in front of the unit and 1m below the vertical centre line of the unit.

The sound level is tested under 11.5dB(A) background noise in a baffle chamber with external static pressure of 80 Pa.

240V/50Hz/1PH – ESP 30Pa

Model	Speed	1/1 Octave Sound pressure level (dBA, ref 20µPa)							Overall A(dBA)
		125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	
MCW600C	High	27.9	28.7	29.0	36.8	30.7	23.5	13.3	43.5
	Medium	26.4	26.6	27.9	36.1	29.6	21.5	9.9	42.5
	Low	25.7	26.2	26.7	35.4	28.8	20.7	9.7	41.3

Microphone position: 1m in front of the unit and 1m below the vertical centre line of the unit.

The sound level is tested under 11.5dB(A) background noise in a baffle chamber with external static pressure of 30 Pa.

240V/50Hz/1PH – ESP 60Pa

Model	Speed	1/1 Octave Sound pressure level (dBA, ref 20µPa)							Overall A(dBA)
		125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	
MCW600C	High	27.4	32.2	37.9	40.3	36.1	23.8	16.2	49.0
	Medium	26.0	31.3	36.1	38.9	34.6	22.1	13.3	47.2
	Low	21.4	27.2	33.0	34.4	29.5	15.7	7.2	43.3

Microphone position: 1m in front of the unit and 1m below the vertical centre line of the unit.

The sound level is tested under 11.5dB(A) background noise in a baffle chamber with external static pressure of 60 Pa.

240V/50Hz/1PH – ESP 80Pa

Model	Speed	1/1 Octave Sound pressure level (dBA, ref 20µPa)							Overall A(dBA)
		125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	
MCW600C	High	28.2	36.1	40.2	43.8	40.0	28.9	20.5	52.0
	Medium	26.6	33.7	38.4	42.1	37.7	26.4	15.8	50.0
	Low	27.4	32.7	37.7	40.8	35.9	25.0	13.5	49.0

Microphone position: 1m in front of the unit and 1m below the vertical centre line of the unit.

The sound level is tested under 11.5dB(A) background noise in a baffle chamber with external static pressure of 80 Pa.

240V/50Hz/1PH – ESP 30Pa

Model	Speed	1/1 Octave Sound pressure level (dBA, ref 20µPa)							Overall A(dBA)
		125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	
MCW800C	High	26.4	34.3	36.4	41.3	40.3	23.2	15.1	49.3
	Medium	24.3	31.1	32.3	39.5	34.6	20.0	13.6	46.0
	Low	23.2	28.8	29.2	34.6	31.2	17.8	12.4	42.6

Microphone position: 1m in front of the unit and 1m below the vertical centre line of the unit.

The sound level is tested under 11.5dB(A) background noise in a baffle chamber with external static pressure of 30 Pa.

240V/50Hz/1PH – ESP 60Pa

Model	Speed	1/1 Octave Sound pressure level (dBA, ref 20µPa)							Overall A(dBA)
		125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	
MCW800C	High	31.9	33.7	39.9	45.4	40.0	27.7	18.2	53.1
	Medium	29.5	32.5	38.6	43.6	38.2	25.6	15.7	51.5
	Low	28.2	30.6	36.3	41.5	36.2	23.4	12.6	49.7

Microphone position: 1m in front of the unit and 1m below the vertical centre line of the unit.

The sound level is tested under 11.5dB(A) background noise in a baffle chamber with external static pressure of 60 Pa.

240V/50Hz/1PH – ESP 80Pa

Model	Speed	1/1 Octave Sound pressure level (dBA, ref 20µPa)							Overall A(dBA)
		125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	
MCW800C	High	32.9	36.0	40.8	46.2	41.4	29.3	19.7	54.4
	Medium	31.5	34.2	39.9	45.2	40.1	27.9	17.9	53.2
	Low	31.0	33.5	38.2	43.9	39.1	26.3	16.4	52.3

Microphone position: 1m in front of the unit and 1m below the vertical centre line of the unit.

The sound level is tested under 11.5dB(A) background noise in a baffle chamber with external static pressure of 80 Pa.

240V/50Hz/1PH - ESP 30Pa

Model	Speed	1/1 Octave Sound pressure level (dBA, ref 20μPa)							Overall A(dBA)
		125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	
MCW1000C	High	29.4	34.5	38.6	44.1	38.8	25.4	18.1	51.7
	Medium	26.1	31.2	35.1	40.4	34.6	20.7	11.6	48.3
	Low	22.1	27.5	33.2	37.5	31.5	16.6	6.7	45.4

Microphone position: 1m in front of the unit and 1m below the vertical centre line of the unit.

The sound level is tested under 11.5dB(A) background noise in a baffle chamber with external static pressure of 30 Pa.

240V/50Hz/1PH – ESP 60Pa

Model	Speed	1/1 Octave Sound pressure level (dBA, ref 20μPa)							Overall A(dBA)
		125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	
MCW1000C	High	30.9	35.8	38.5	46.1	40.5	26.6	17.9	53.1
	Medium	28.8	34.0	37.7	45.3	39.3	25.6	15.6	52.0
	Low	28.9	33.3	35.7	44.7	38.2	24.9	14.3	51.1

Microphone position: 1m in front of the unit and 1m below the vertical centre line of the unit.

The sound level is tested under 11.5dB(A) background noise in a baffle chamber with external static pressure of 60 Pa.

240V/50Hz/1PH – ESP 80Pa

Model	Speed	1/1 Octave Sound pressure level (dBA, ref 20μPa)							Overall A(dBA)
		125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	
MCW1000C	High	33.4	38.2	40.5	49.1	42.5	30.1	21.4	55.3
	Medium	31.4	36.3	39.3	47.2	41.0	28.2	19.0	54.0
	Low	31.3	35.2	37.7	46.4	40.8	27.8	17.6	53.1

Microphone position: 1m in front of the unit and 1m below the vertical centre line of the unit.

The sound level is tested under 11.5dB(A) background noise in a baffle chamber with external static pressure of 80 Pa.

240V/50Hz/1PH – ESP 30Pa

Model	Speed	1/1 Octave Sound pressure level (dBA, ref 20μPa)							Overall A(dBA)
		125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	
MCW1200C	High	29.1	35.7	37.3	42.9	37.7	25.2	15.1	50.8
	Medium	27.4	33.0	35.0	40.3	35.2	21.4	10.9	48.2
	Low	23.5	28.7	31.1	35.1	29.5	15.1	6.3	43.6

Microphone position: 1m in front of the unit and 1m below the vertical centre line of the unit.

The sound level is tested under 11.5dB(A) background noise in a baffle chamber with external static pressure of 30 Pa.

240V/50Hz/1PH – ESP 60Pa

Model	Speed	1/1 Octave Sound pressure level (dBA, ref 20μPa)							Overall A(dBA)
		125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	
MCW1200C	High	28.0	36.3	37.8	45.1	40.1	26.6	16.3	52.4
	Medium	28.1	35.2	36.3	42.8	37.9	24.4	13.6	50.6
	Low	24.4	31.6	33.4	40.2	34.1	20.1	8.8	47.4

Microphone position: 1m in front of the unit and 1m below the vertical centre line of the unit.

The sound level is tested under 11.5dB(A) background noise in a baffle chamber with external static pressure of 60 Pa.

240V/50Hz/1PH – ESP 80Pa

Model	Speed	1/1 Octave Sound pressure level (dBA, ref 20μPa)							Overall A(dBA)
		125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	
MCW1200C	High	32.8	39.1	41.2	47.7	43.6	31.4	21.8	54.8
	Medium	30.7	37.2	39.4	46.0	42.1	29.7	19.2	53.7
	Low	31.0	35.7	38.5	44.9	41.1	28.8	17.9	52.9

Microphone position: 1m in front of the unit and 1m below the vertical centre line of the unit.

The sound level is tested under 11.5dB(A) background noise in a baffle chamber with external static pressure of 80 Pa.

Performance Table

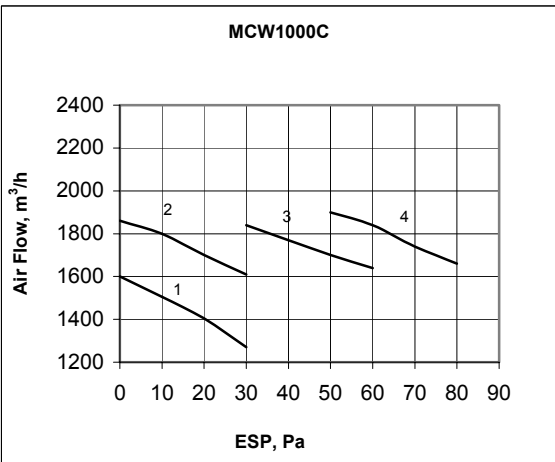
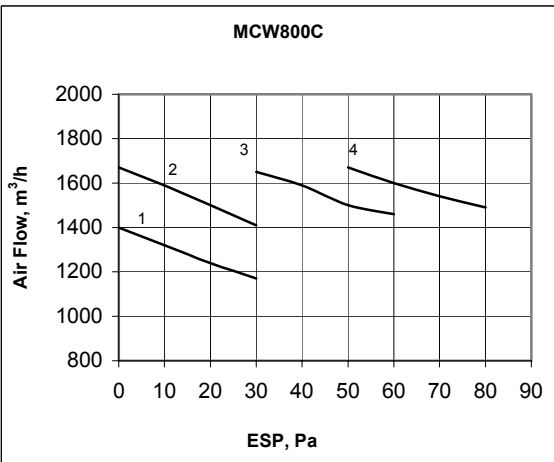
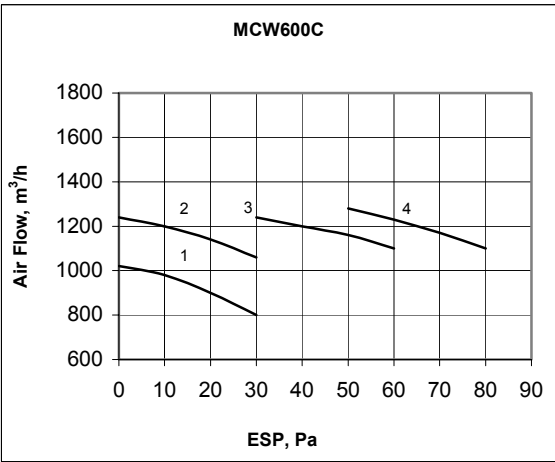
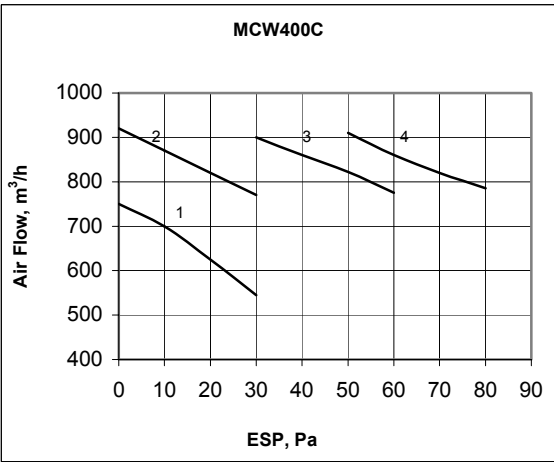
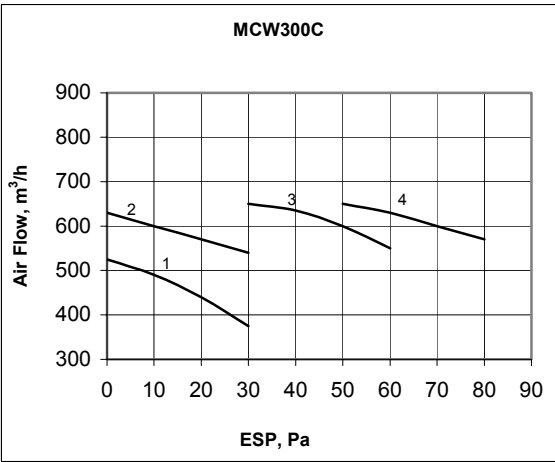
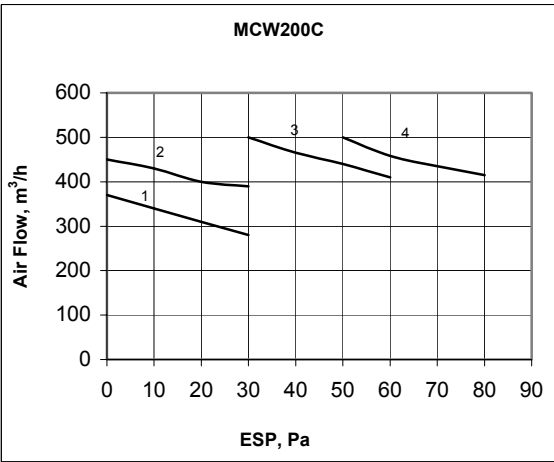
AIR FLOW VS ESP CURVE

1 - 0Pa

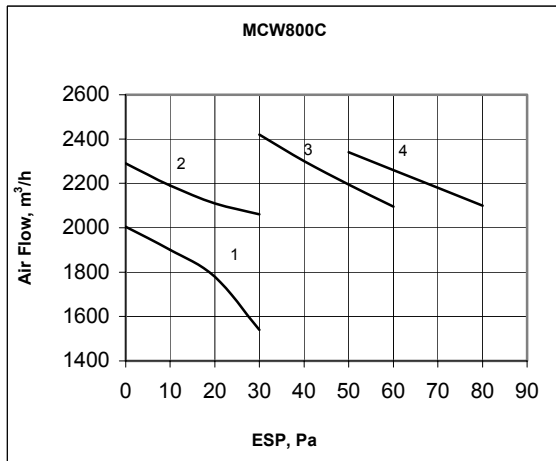
2 - 30Pa

3 - 60Pa

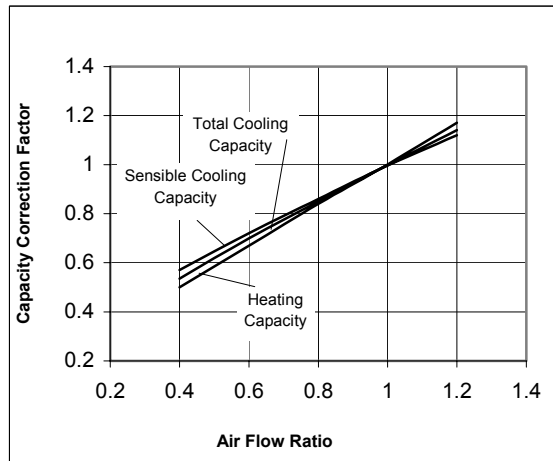
4 - 80Pa



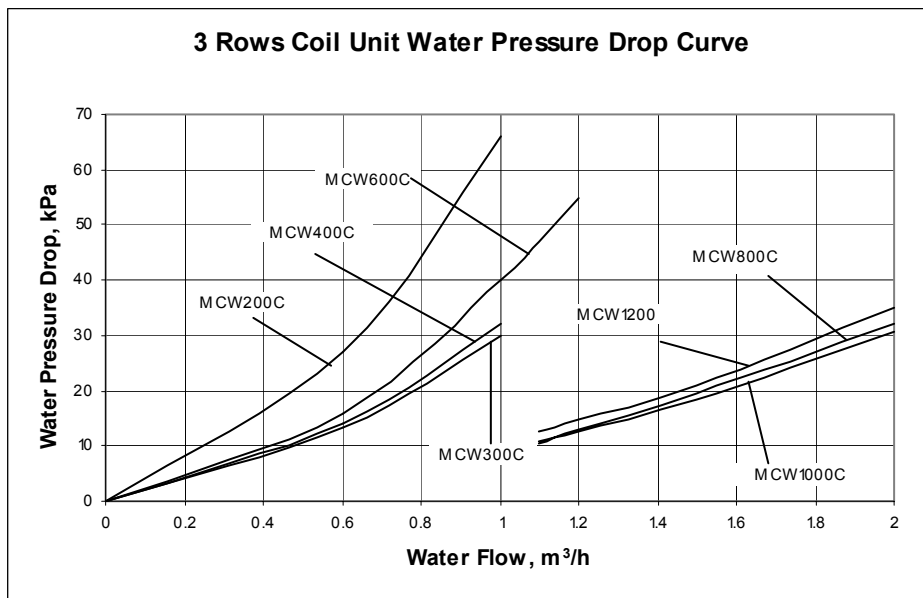
Air Flow vs ESP Curve



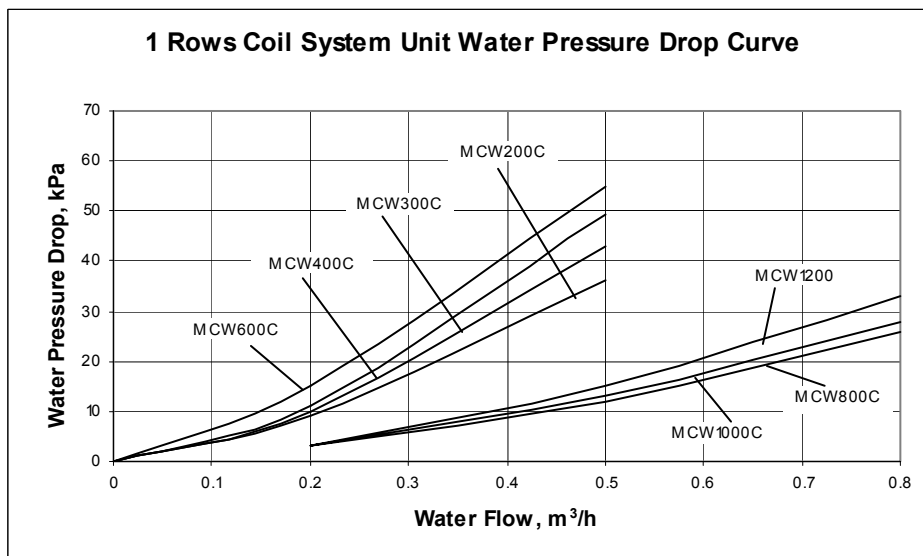
Air Flow Capacity Correction Factors



Water Pressure Drop Curves 2 Pipes System



4 Pipes System



Outlines and Dimensions

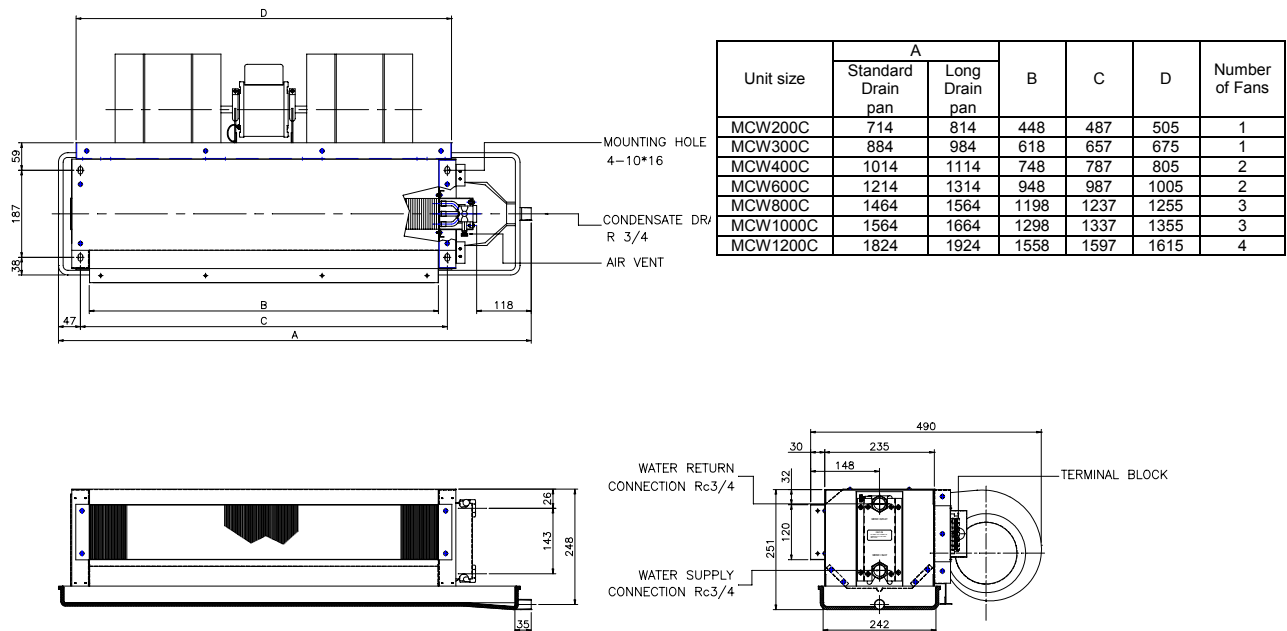


Figure 1

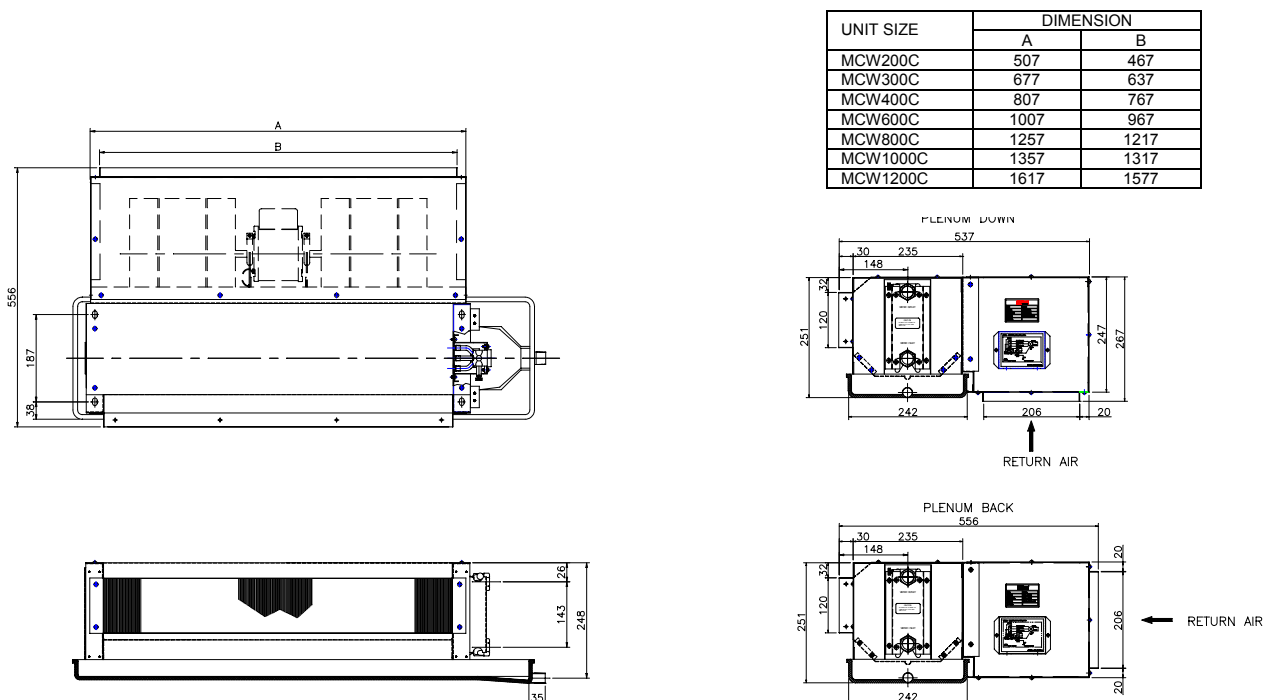


Figure 2

Installation

Receiving

All units leaving the McQuay plant have been inspected to ensure the shipment of quality products. All reasonable means are utilized to properly packing the fan coil unit.

Carefully inspect all shipments immediately upon delivery. When damage is visible, note this fact on the carrier's freight bill and request that the carrier send a representative to inspect the damage. This may be done by telephone or in person, but should always be confirmed in writing.

The shipment should be unpacked in the presence of the agent so that the extent of the damage or loss can be determined. The carrier's agent will make a inspection report and a copy will be given to the consignee for forwarding to the carrier with a formal claim.

Caution

Before installation and running the unit, please check the followings:

1. There must be enough space for the unit installation and maintenance. Please refer to Figure 2 for the unit's outlines and dimensions and Figure 3 for the minimum distance between the unit and the obstacle.
2. Please ensure enough space for piping connection and electrical wiring.
3. Means for disconnection from the supply having a contact separation of at least 3 mm in all poles shall be incorporated in the fixed wiring according to wiring rules.
4. Check whether the hanging rods can support weight of the unit (see table of specification in page 5).
5. The unit must be installed horizontally to ensure proper operation and condensate draining.
6. The ext. static pressure of the ducting must be within the design static pressure range.
7. The installation agent must supply service valves and insulation for water piping in accordance with the local code and regulation.
8. Confirm that the unit has been switched OFF before installing or servicing the unit.

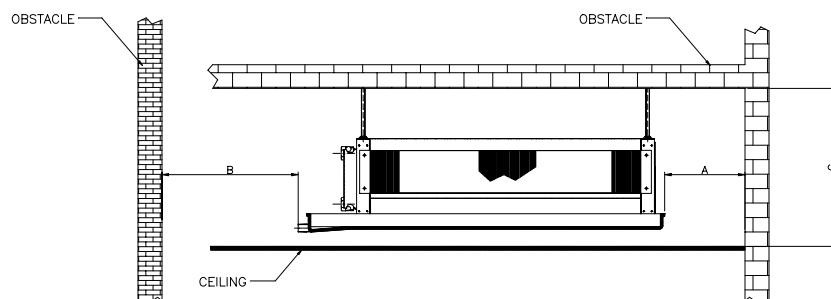
Unit Installation

The unit is designed to be installed concealed ceiling and the like. Installation and maintenance should be performed by qualified persons who are familiar with local code and regulation, and experienced with this type of appliance.

There are holes on the top of the unit for hanging concealed ceiling. Please refer to Figure 3 Figure 4 Figure 5 and Figure 6.

Caution:

Make sure the top level of the unit horizontal while installation. The drain pan is designed with a little gradient to facilitate drain.



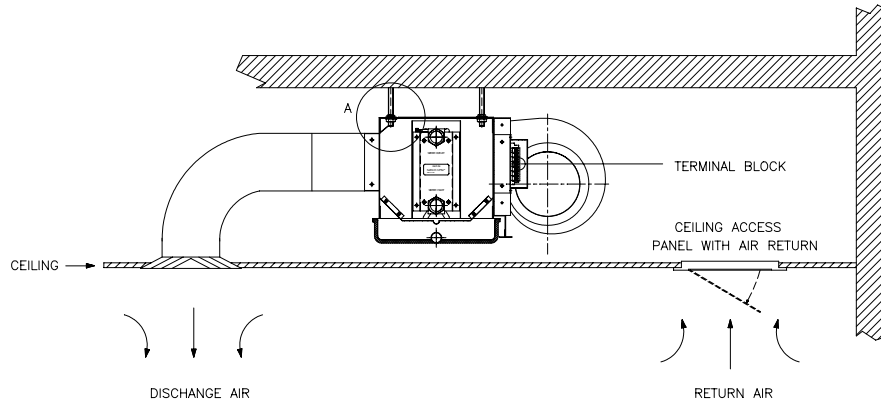


Figure 4

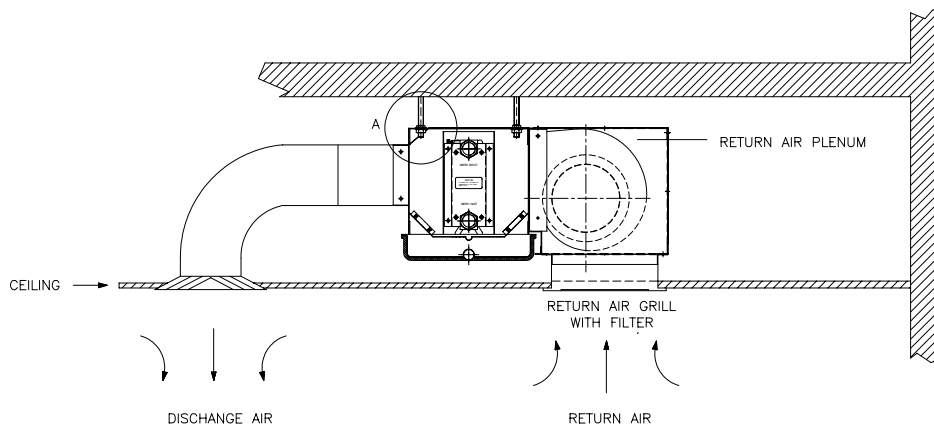
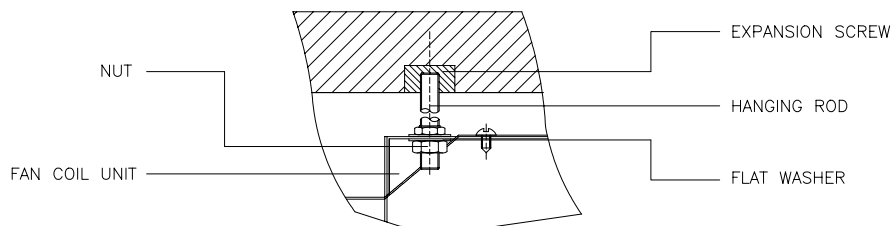


Figure 5



Detail A

Air duct connection

Air duct which is made of galvanized steel can be connected to the flange of the unit. Refer to Figure 2 for the unit dimensions. Insert the duct into the flange and fix with screws. If dimensions of the duct and flange are different, connect with a connector between them.

Air duct connection must be installed in accordance with the national code for fire protection and construction of ventilation and air conditioning works.

Pipe connection

Chilled water pipe connection

Connect size Rc3/4 chilled water pipes to the unit. Water inlet is on the bottom and water outlet is on top.

Drain pipe connection

Drain pipe can be either PVC or steel. Connect R3/4 connector to drain pipe of the unit. The connection must be concealed with rubberized fabric to avoid water leak. The suggested fall of the drain pipe is at least 1:50.

Refer to Figure 6 for typical engineering piping installation.

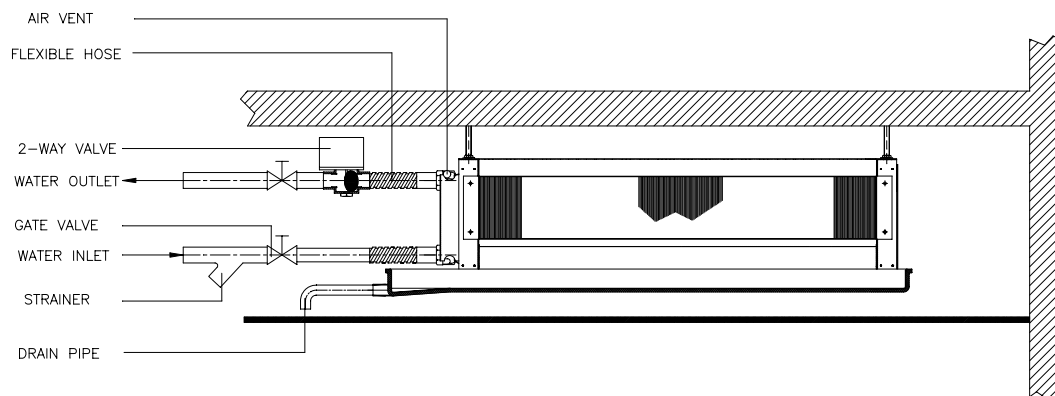


Figure 6

For Models: MCW800C MCW1000C MCW1200C (0Pa and 30Pa)

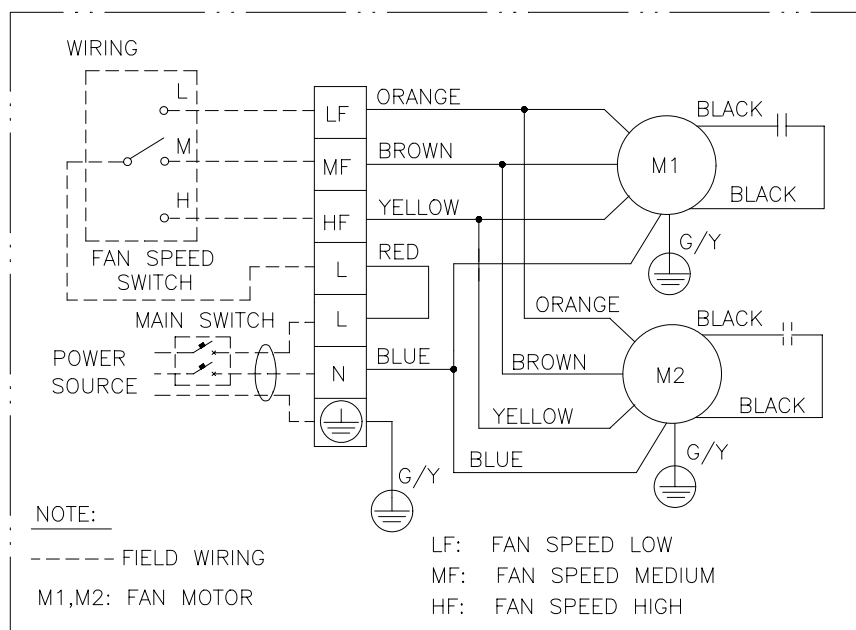


Figure 8

For Models: MCW200C MCW300C MCW400C MCW600C (60Pa and 80Pa)

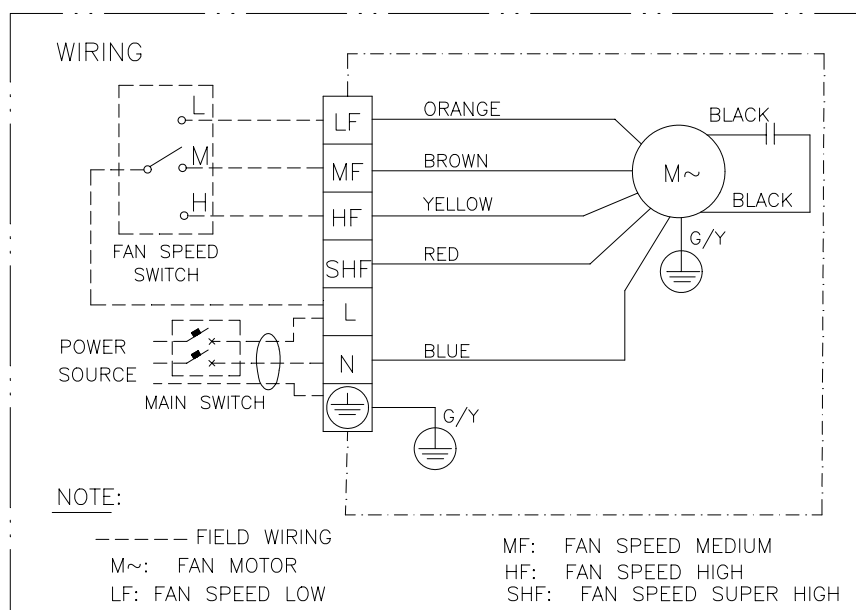


Figure 9

For Models: MCW800C MCW1000C MCW1200C (60Pa and 80Pa)

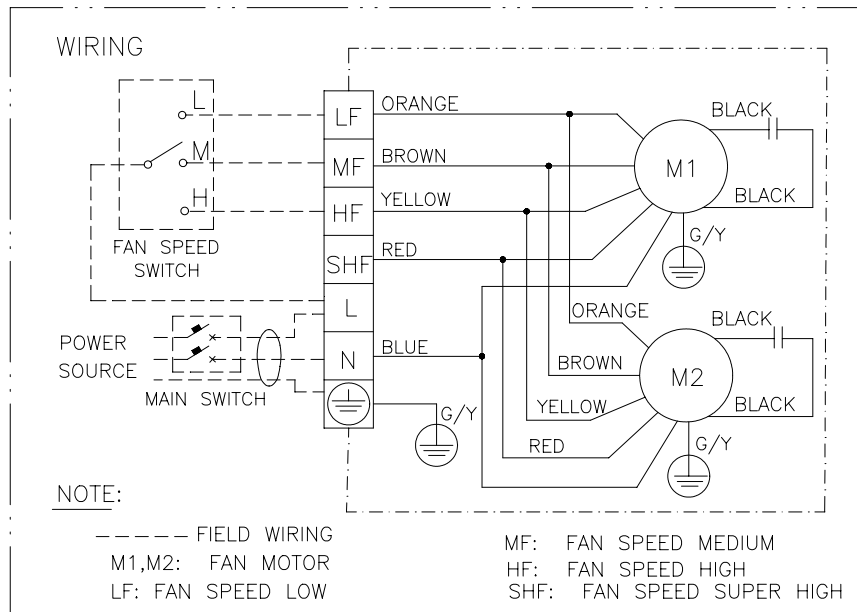


Figure 10

For Models : MCW200CD MCW300CD MCW400CD (0Pa and 30Pa)

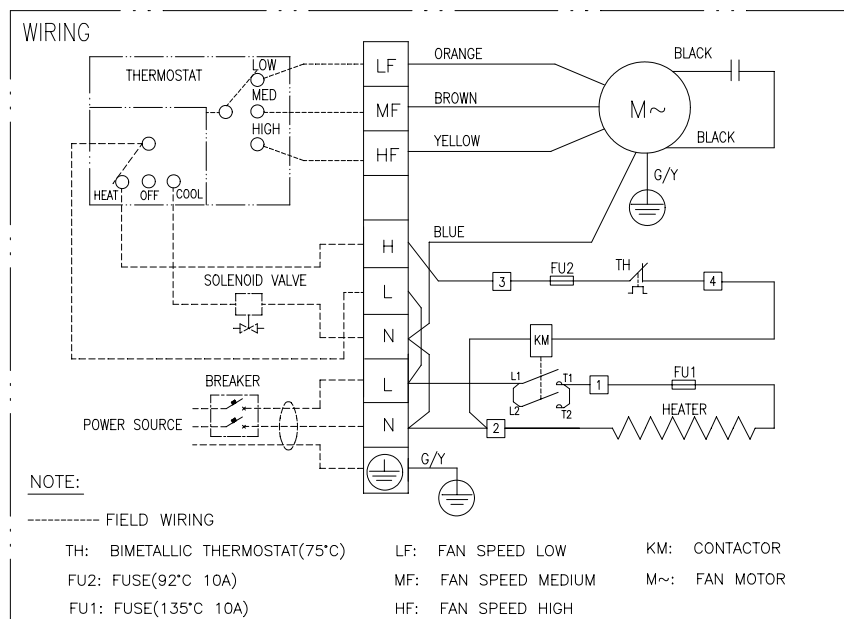


Figure 11

For Models : MCW200CD MCW300CD MCW400CD (0Pa and 30Pa)

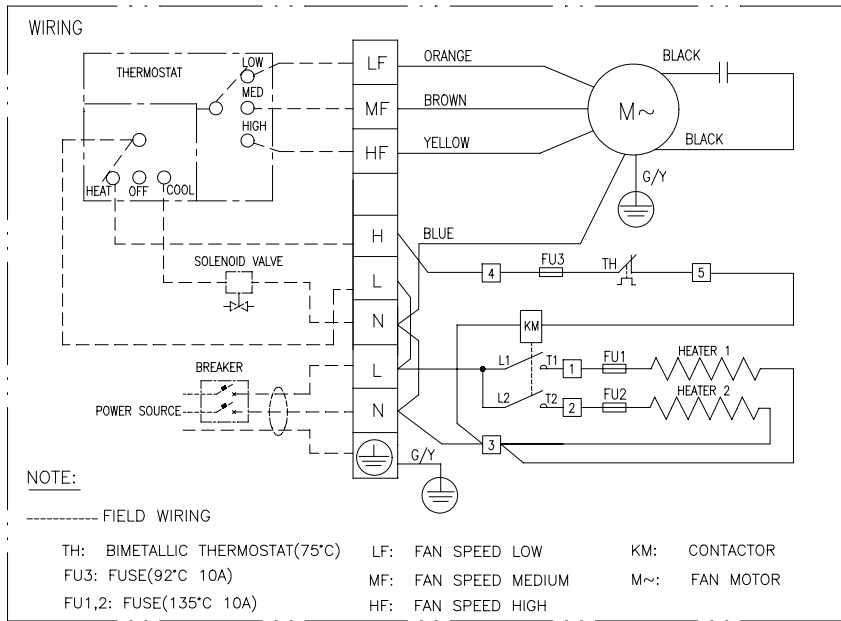


Figure 12

For Models : MCW600CD (0Pa and 30Pa)

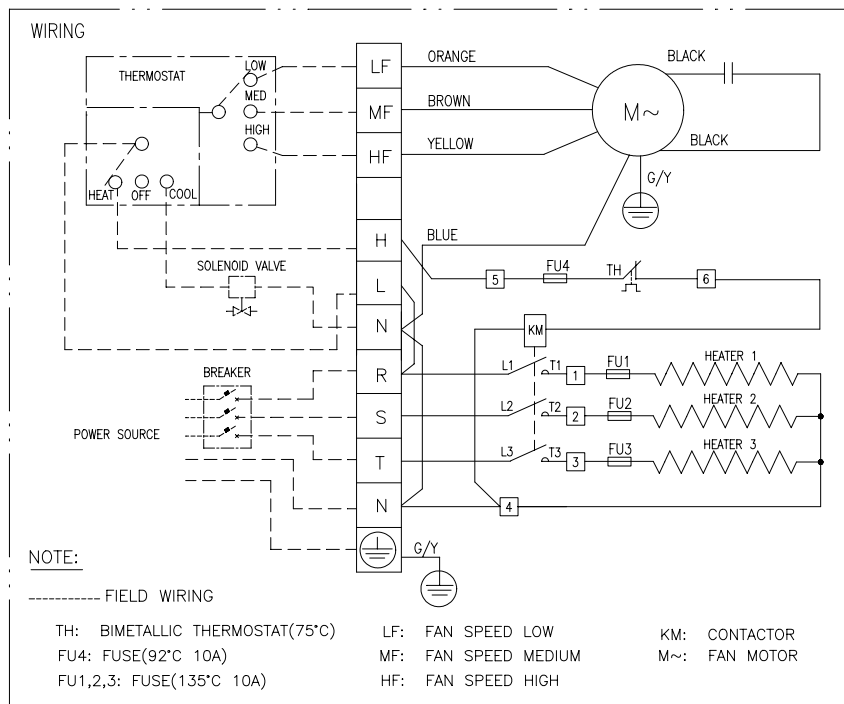


Figure 13

For Models : MCW800CD MCW1000CD MCW1200CD (0Pa and 30Pa)

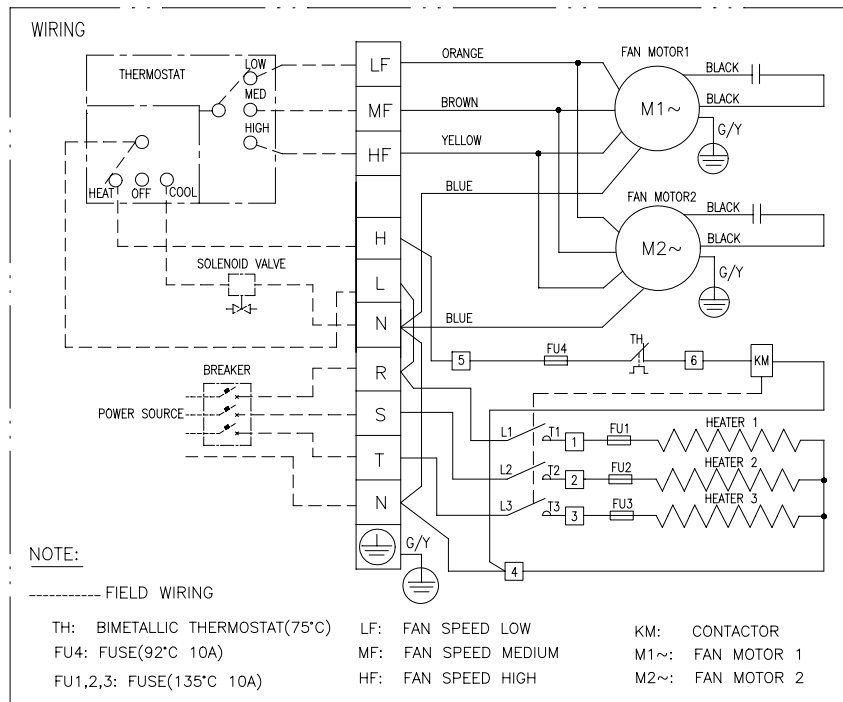


Figure 14

For Models : MCW200CD MCW300CD MCW400CD (60Pa and 80Pa)

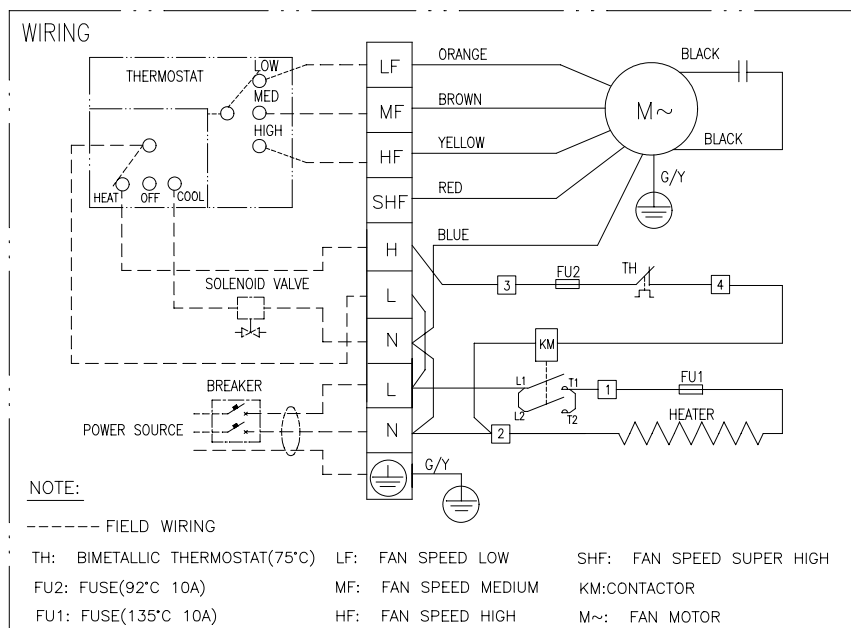


Figure 15

For Models : MCW200CD MCW300CD MCW400CD (60Pa and 80Pa)

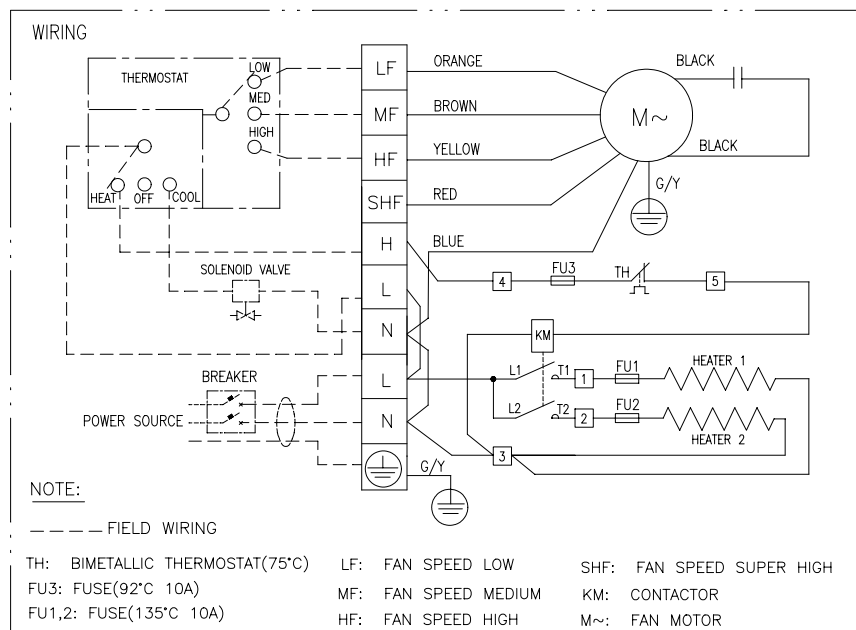


Figure 16

For Models : MCW600CD (60Pa)

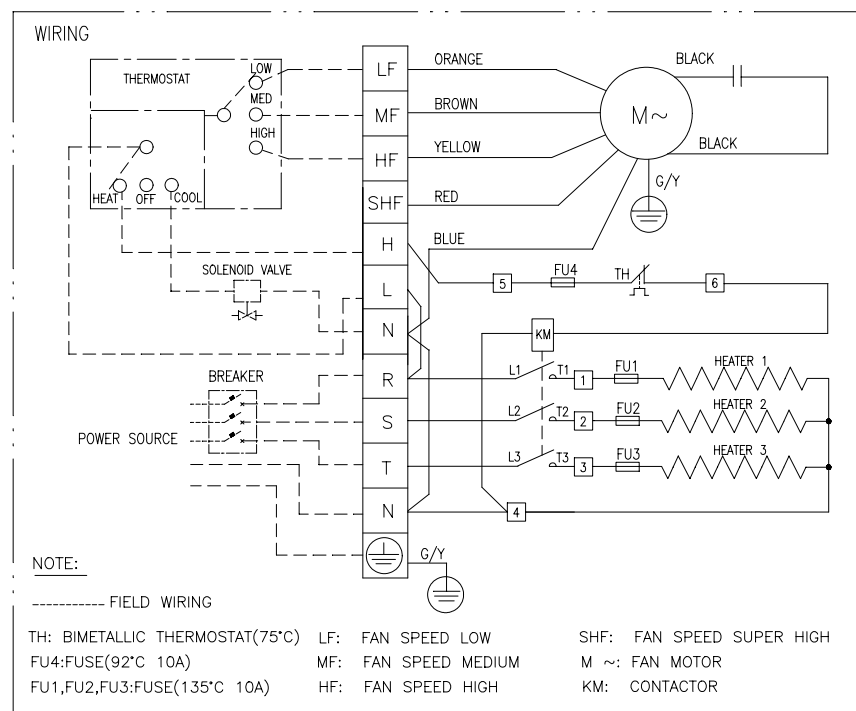


Figure 17

For Models : MCW800CD MCW1000CD MCW1200CD (60Pa and 80Pa)

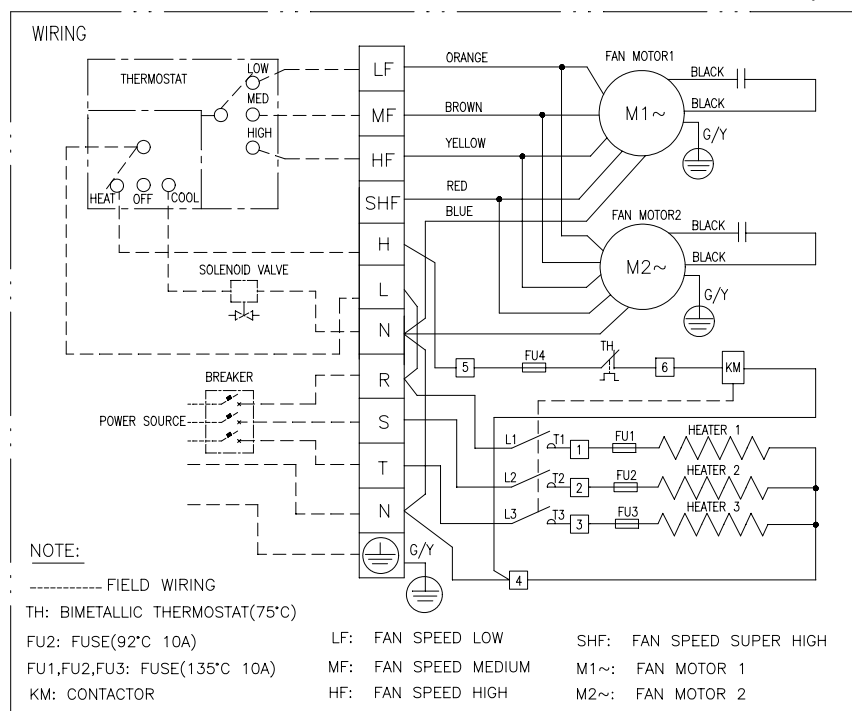


Figure 18

WARNING:

Switch shall be connected to the supply terminals and shall have a contact separation of at least 3 mm in each pole.

Confirm that the unit has been switched OFF before installing or servicing the unit.

OPTIONAL PARTS

Electric valve package kits

The electric valve package kits are furnished completely soldered and leak tested at the factory. Four(4) solder connections are required to complete the installation of the valve package into the system (two at the coil supply and return connections and two at the supply and return run outs).

Installation

1. Clean all connections before assembly with fine sandpaper. A good grade solder flux will help ensure a proper bond. **A general purpose 50/50 solder is recommended. Do not silver solder or braze the valves or copper fittings in this kit.** A chill block, or equivalent, must be used to prevent leaks in the factory connection or overheating the valve.
2. Position the valve package on the unit by moving the kit piping slightly. **Do not try to move the coil connections.**
3. The 2"×4" indentation in the back of the secondary drain pan on the units is provided for the supply and return runouts if they are brought up from below the pan. We recommend removing or covering the secondary drain pan on these units before soldering the coil connections as hot solder or the torch flame could damage the pan. Be careful not to burn wire insulation during soldering.
4. **Caution: The electric valve and gate valves are to be in the open position, ball valves in the closed position while soldering. Do not move the valve handles until the tubing has cooled for three (3) minutes.**
5. A hydrostatic test on all piping is recommended after all connections are complete.
6. All piping not over the secondary drain pan must be well insulated to prevent sweating. There is an 0.840 O.D. condensate drain connection on the unit drain pan suitable for a 1/2" plastic pipe fitting (by others).
7. Field wiring must be in accordance with local codes and/or the National Electrical Code. Wiring should be routed in such a manner to prevent the possibility of condensate dripping from the valve package piping onto the electrical conduit.

Caution

To prevent electrical shock, disconnect electric power to system at main fuse or circuit breaker box until installation is complete.

Valve Actuator installation

Latch the manual operating lever in the engaged position (N.C. only).

Depress the release button (See Figure 19). Align the body with the actuator to ensure the stem is inserted into the large mating hole on the bottom side of the actuator. Engage the actuator on the body and release the button. Actuator AG2 is used for normally open operation. Actuator AG1 is used for normally closed operation.

Mounting

The PopTop™ valve can be mounted vertically or horizontally. If mounted horizontally, the valve should be mounted within 90° of upright position (See Figure 20). If mounted vertically, care should be taken to ensure moisture does not drip onto motor. The valve actuator should not be mounted upside down.

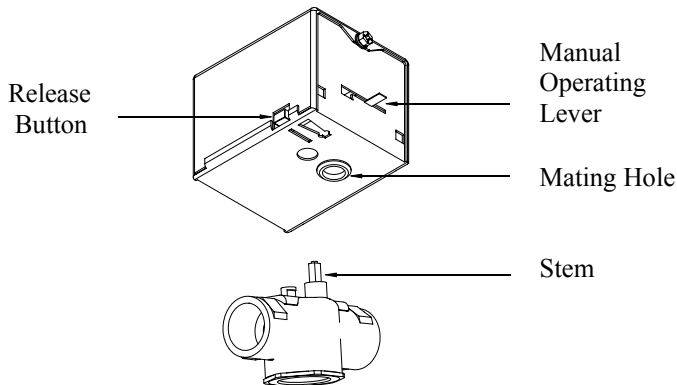


Figure 19

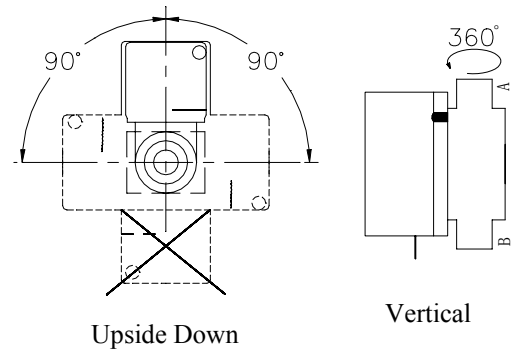


Figure 20

Room Thermostats

The RAB10... room thermostat is used in heating or cooling systems to maintain the selected room temperature.

Functions

Heating If the room temperature falls below the selected set point, the heating contact will close.

Cooling If the room temperature exceeds the selected set point, the cooling contact will close.

Fan speed There are two possibilities to control the fan speed:

- Manually by means of the three-speed fan switch on the thermostat for continuous operation.
- Automatically by switching to the selected fan speed via the thermostat for controlled operation. In that case - prior to commissioning - the thermostat function must be changed. There are two choices available:



Auto

Selected fan speed as continuous operation

Fan is switched at the same time as the valve

Ventilation

When the ventilation function is selected (RAB10.1), the heating and cooling contacts are always open and the fan operates at the selected speed.

Changeover

Heating or cooling is selected with a switch located on the front of the thermostat.

Adjustments

The required temperature can be selected by a set point adjuster on the front of the thermostat.

The setpoint setting range can be mechanically limited by means of tappets under the unit over.

Mounting, installation and commissioning

The thermostat should be located where the air temperature can be sensed as accurately as possible, without getting adversely affected by direct solar radiation or other heat or refrigeration sources.

Mounting height is about 1.5 m above the floor.

The unit can be fitted to most commercially available recessed conduit boxes or directly on the wall.

Only authorized personnel may open the unit to perform service (**Caution:250V!**).

The unit must be isolated from the main supply before opening.

When installing the unit, fix the base plate first, then hook on the thermostat body and make the electrical connections. Then fit the cover and secure it (also refer to separate mounting instructions).

The thermostat must be mounted on a flat wall.

The local electrical regulations must be complied with.

If there are thermostatic radiator valves in the reference room, set them to their fully open position.

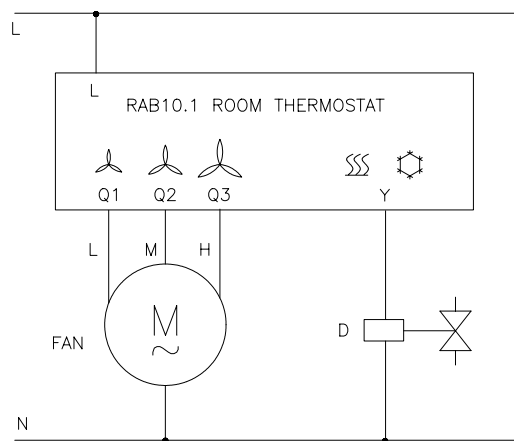
Maintenance

The room thermostat is maintenance-free.

Technical data

Power supply	Operating voltage Frequency	AC 250 V 50 or 60 Hz
Operational data	Switching differential SD Set point setting range Amperage at AC 250 V	≤1 K 8~30°C 0.2~6 (2) A
Environmental conditions	Operation Climatic conditions Temperature Humidity Pollution degree	to IEC 721-3-3 class 3K5 0~+50□ < 95% r.h. normal, to EN 60730
Norms and standards	CE conformity to Low voltage directive Product standard Safety standard Degree of protection Screw terminals for Weight Color	73/23/EEC and 93/68/EEC EN 60730 EN 60730 IP30 to EN 60529 2×1.5 mm ² or 1×2.5 mm ² , min. (0.5 mm ²) 0.14 kg white, NCS S 0502-G (RAL 9003)

Connection diagram



L	Operating voltage AC 250 V
M	3-speed fan
N	Neutral
Q1	Control output "Fan speed ", AC 250 V
Q2	Control output "Fan speed ", AC 250 V
Q3	Control output "Fan speed ", AC 250 V
Y	Control output "Valve actuator", AC 250 V
D	Thermal valve or zone valve

Figure 21

The electric valve package kits and room thermostat are optional parts. If they are required by customers, the electric valve package kits can be installed in factory (refer to Figure 22) and the room thermostat will be with the unit as accessory.

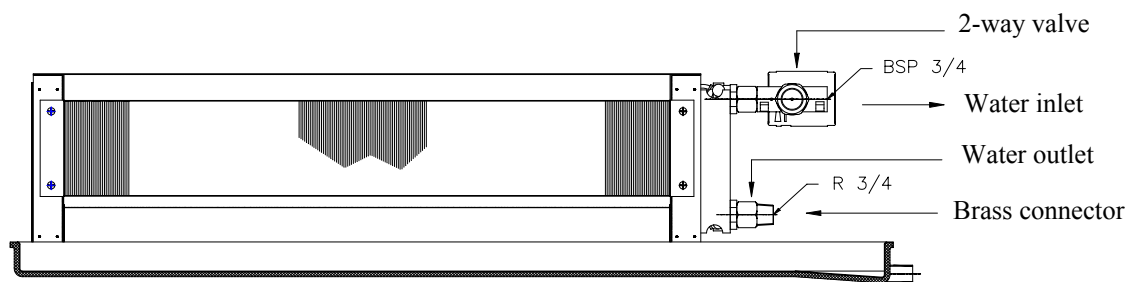


Figure 22

Maintenance

General

Installation and maintenance should be performed by qualified persons who are familiar with local code and regulation, and experienced with this type of appliance.

Confirm that the unit has been switched OFF before installing or servicing the unit.

A good general maintenance plan will avoid losses and unexpected shutting down of the equipment.

Dirty filters reduce air flow as well as unit performance. Thus changing or cleaning the filters is very important. Check the cleanliness of filter and replace or clean as required monthly.

Coils shall be cleaned from dust, dirt or lint with compressed air, water. They can be brushed with a soft brush and vacuum cleaner.

Water coil not used during winter season shall be drained, or anti-freezing solution shall be added to the water circuit to avoid freezing.

Month intervals

- 1 Inspect and clean condensate drain pan to avoiding clogging of drainage by dirt, dust, etc. Inspect drainage piping to ensure the proper condensate flow.
- 2 Check and clean the coil. Clean the coils with low pressure water jet or low pressure air.
- 3 Clean and tighten all the wiring connections.
- 4 Drain out the system water and check for build up of mineral deposits.

